Yahoo Group Archive: 24GHzHam

Yahoo Group summary: The Place for Hams interested in 24GHz

These Yahoo Groups messages were archived in WARC format by ArchiveTeam in 2018. This PDF was generated by Digital Library of Amateur Radio & Communications from the WARC files in 2026.

Date span: 2007-02-16 through 2017-12-06

Source WARC: 24ghzham.FMMQNON.warc.gz

Source item: https://archive.org/details/yahoo-groups-2018-03-20T23-24-17Z-12f9c1

Messages included in this PDF: 432

Yahoo replaced the domain portions of email addresses with @... in the archived messages. Characters lost in Yahoo's archived text appear as ?.

Messages are presented in ascending Yahoo message-ID order. Gaps indicate records absent from the source WARC or messages omitted from this PDF as spam.

1. DRO

Yahoo group: 24GHzHam
Date: 2007-02-16 19:11:18 UTC
From: Frank Kelly
Topic: 1 Message: 1

Several folks have suggested that it may be possible to pull the 12.5Ghz DRO availabe with this unit down in frequency either by changing the puck or adding material to it. Hopefully there are some users here who have experience with this and will share their results.
Frank

3. DRO Experiments

Yahoo group: 24GHzHam
Date: 2007-02-17 23:14:14 UTC
From: drhelenmahoney
Topic: 3 Message: 3

I have been playing with the CTI DRO oscillators for 78Ghz quite a bit. They are very stable, clean and lock easily. The reference input can be between about 20mhz and 200mhz. The DRO for this project will put out on the listed frequency with a specific ref. frequency. (we don't know what that is yet.) However, looking at the standard PDRO's they have it is probably a 12.6ghz standard oscillator. They apparently tune plus and minus 100mhz judging by the fact that the models are only listed for every 200mhz.
The DRO will lock on multiples of the ref. frequency. The trick for me was to find an OCXO that would lock it up on the frequency I wanted. I ended up with a 100mhz OCXO divided down to 25mhz and an output of 13.375ghz from the DRO. My IF was high sided 450mhz.
One possibility is to think differently about your IF frequency. With an 817 IF rig you can use an awful lot of frequencies. So their should be a good combination of Ref. and output frequency to put us right on with a simple OCXO arrangement.
The PDRO is pretty insensitive to voltage. I run it on 12v with no problems.
Hope that helps,
Doug K6JEY

4. Re: [24GHzHam] DRO Experiments

Yahoo group: 24GHzHam
Date: 2007-02-18 19:27:45 UTC
From: Tony Long
Topic: 3 Message: 4

These oscillators (from the Ebay ad) are at 12.5755 GHz. CTi makes oscillators custom for many applications and at custom frequencies. This partcular flavor of DRO oscillator has an internal reference crystal oscillator. They should tune more than 100 MHz, they should tune about 5% around their center frequency, though thats only a typical number that I've seen, hard to say what these will be.

-Toyn KC6QHP

>
> I have been playing with the CTI DRO oscillators for 78Ghz quite a
> bit. They are very stable, clean and lock easily. The reference input
> can be between about 20mhz and 200mhz. The DRO for this project will
> put out on the listed frequency with a specific ref. frequency. (we
> don't know what that is yet.) However, looking at the standard PDRO's
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> models are only listed for every 200mhz.
> The DRO will lock on multiples of the ref. frequency. The
> trick for me was to find an OCXO that would lock it up on the
> frequency I wanted. I ended up with a 100mhz OCXO divided down to
> 25mhz and an output of 13.375ghz from the DRO. My IF was high sided
> 450mhz.
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> frequency. With an 817 IF rig you can use an awful lot of frequencies.
> So their should be a good combination of Ref. and output frequency to
> put us right on with a simple OCXO arrangement.
> The PDRO is pretty insensitive to voltage. I run it on 12v
> with no problems.
> Hope that helps,
> Doug K6JEY
>
>
>

5. Re: 24 GHz Switch Drivers

Yahoo group: 24GHzHam
Date: 2007-02-21 19:41:56 UTC
From: Frank Kelly
Topic: 5 Message: 5

Dick,

Just thinking out loud, it would be nice to use your waveguide relay's microcontroller to do the T/R switiching in these 24GHz modules.

We first need to get the 24GHz module's control connector information to see what it takes to go from receive to transmit and back. Assuming it can be done with a logic signal, then it would be logical (no pun intended) to let your microcontroller do it.
Then, the microcrontroller just needs an interface line or two out to the IF radio that waits for the radio's PTT command. When it sees one, the microcontroller can then sequence both the 24GHz module and the waveguide relay cleanly through to TX, and then back again when the mic button is let up.
Seems very straightforward.

Hopefully some documentation will surface soon on the 24GHz module's connector and control scheme.

Frank

Frank
==========
From: Dick Kolbly <dick@...>
Date: 2007/02/20 Tue PM 07:14:09 CST
To: Frank Kelly <fm.kelly@...>
Subject: Re: 24 GHz Switch Drivers

Frank:

Attached is the schematic. I kluged it up on a proto board, and the
H-bridge driver worked great. The final code has not been written. As
you can tell, there are a LOT of pins we can dedicate. My intent was
that a delay between the switch command and the status indicator
would allow safe operation. You might give some thought to just how
this could be implemented, timing diagram, etc. We can do almost
anything we want.

Dick

At 02:32 PM 2/20/2007, you wrote:
>Dick,
>
>Sounds like a solid design that's straighforward to implement. If
>you can't email the controller schematic to me, just bring a copy to meeting.
>The only comment I have is that it might be nice to add some
>sequenced outputs if you have any leftover microcontroller pins.
>
>I mention this as I have been using a PIC in my latest radios for

>running everything. My IF radio, a Yeasu FT-817, sources 5V when
>the mic is keyed (but not yet TX enabled). The micro senses and
>sequences everything including the transverter and antenna relays
>into TX. The last thing the sequencer does is to pull down an open
>collector transistor output which finally allows the Yeasu IF to
>TX. When the mic is released, the whole thing reverses. This is
>one of the things that makes the Yaesu a nice IF controller for a
>transver radio--it's PTT line does not allow the radio to put out RF
>unless the TX enable line is pulled down. This way you can put as
>much delay in the enable line as its necessary to switch from RX to TX.
>
>A sequencer function is very easy to implement with a
>microcontroller, although not everyone will use the same inputs and
>outputs. Maybe there is a general purpose way to do this, but I
>wouldn't hold anything up for it since it can be done externally now
>and your first priority is running the motor. Even if you have us a
>"wait, I'm still switching" output with some delay, it would
>probably be helpful.
>
>I just tend to think of integration hardware when building radios
>and when you said you were using a controller it caught my attention.
>
>Proceed and we shall keep in touch.
>
>Frank
>
>
>==========
>From: Dick Kolbly <dick@...>
>Date: 2007/02/20 Tue PM 04:21:18 CST
>To: Frank Kelly <fm.kelly@...>
>Subject: 24 GHz Switch Drivers
>
>Frank:
>
>The controller is a 2" x 3" double-sided board with an H-bridge to
>drive the motor. As you remember, I use a DC motor (from Jameco) as a
>spring to keep the rotor in position. A Microchip PIC74F84A
>microcontroller drives everything. Since there are extra pins, I put
>jumpers so the switch can be reversed, and set up as a simple (logic
>level true to switch, false to the other position) or as a "pulse to
>switch" mode. Indicator lines tell what the switch position is. Note
>that there is no rotor position sensing, so if the switch jams, you
>would have no knowledge of it. I did a design using Hall-effect
>sensors, but it got pretty complicated mechanically. The controller
>is designed to run on 12 V DC, with control and feedback by TTL-type
>logic levels. If we produce these, we can always sell the controller
>as a separate item, but it will be the responsibility of the user to
>provide correct voltages.
>

>I can send you a schematic of the driver if you like.
>
> Dick
>

6. WARNING!! Do not remove waveguide covers!!

Yahoo group: 24GHzHam
Date: 2007-02-27 05:59:37 UTC
From: Frank Kelly
Topic: 6 Message: 6

Mike, WB6DJI reports:

VERY IMPORTANT to Microwave 24GHz users of this surplus SDH Transceiver
Do not take off the waveguide covers off the module. If you take the
philip heads screws out and pull the covers off, YOU WILL BREAK THE WIRE
BONDS from the GREEN I.F, BOARD to the Integrated Circuit Modules, there are
no tunable parts and, only I.C.'s with bond wires.

These units have 2 watt output MMICs Tx PA chips in parallel, so one can
get get a good amout of power at 24GHz!

7. Correction to power output

Yahoo group: 24GHzHam
Date: 2007-02-27 06:06:17 UTC
From: Frank Kelly
Topic: 7 Message: 7

A correction from Mike, WB6DJI:

Correction:
These units have two 1 watt output MMICs Tx PA chips in parallel, so one can get get a good amout of power at 24GHz!
Mike

8. Preliminary connection information

Yahoo group: 24GHzHam
Date: 2007-02-28 02:41:26 UTC
From: Frank Kelly
Topic: 8 Message: 8

```
There is a power connection data sheet inluded with every unit
Yellow wire= +12 volt dc 1,5 amp
blue wire = -5,8 to -6 volt dc 80 m amp
red wires = +7,35 volt dc 4,5 amp
black wires are common for all voltages
```

9. waveguide filter tuning

Yahoo group: 24GHzHam
Date: 2007-03-01 07:08:39 UTC
From: Tony Long
Topic: 9 Message: 9

I managed to get one of the waveguide filters retuned today to work at 24.192 GHz. I'm not sure how they look out of the box, but when the screws are all the way out, the filter has a very nice, sharp bandpass somewhere up at 26.4 GHz or so, and is about 200 MHz wide. As I began tuning I could get the passband to move down, but it was difficult to preserve the shape. I'm sure with some more time spent tuning (I spent just under an hour) I could get a better result. However, my main goal was not for a nice passband shape, but low insertion loss at 24.2 GHz. The end result is that the passband is somewhere on the order of 300-400 MHz wide, depending on how you look at it, but at 24.2 GHz, I have 3 dB insertion loss. Using my double conversion high side LO scheme (as posted in the files section) and the stock 12.5755 GHz LO from the CTI oscillator, the LO and unwanted mixing products are down from the desired product by over 70 dB. That should ensure that essentially the power amplifier is only amplifying the intended mixing product, the signal at 24.192 GHz.

The passband ripple that I got is around 3 or 4 dB, but thats over 200 MHz. I will post pictures of the response as well as a diagram showing the depth of the adjustment screws. This might or might not be helpful, as half a turn of the screw can make a difference. It might be a place to start though for those without access to a network analyzer at 24 GHz.

-Tony KC6QHP

10. One more comment about the filters

Yahoo group: 24GHzHam
Date: 2007-03-01 07:37:21 UTC
From: Tony Long
Topic: 10 Message: 10

If you are thinking of using a 144 MHz IF with this, you will need to be very careful when tuning the filter. You will have to tune the filter such that the LO is outside the passband. With the results I got, 10-20 dB should be doable assuming you have a network analyzer or a spectrum analyzer. In any case, a 432 MHz IF would work better, or much better still, a ~1 GHz IF.

-Tony KC6QHP

11. DSOs arrived today - test results

Yahoo group: 24GHzHam
Date: 2007-03-07 06:05:34 UTC
From: Jeffrey Pawlan
Topic: 11 Message: 11

I had ordered 4 of the DSOs directly from Kees and they arrived late today.

I did preliminary testing of them and will post the results here:

Initial DC current is over .7A but it quickly settles to 0.41A within 5 minutes which most likely means that there is a fast heating crystal oven inside.

The output power at 12.5755GHz is between +13 and +14dBm depending on the DRO.

The frequency is generally within 15KHz. It does move around enough so that narrowband CW or SSB operation would not be possible. Thus it will need to be modified to provide an external highly stable reference frequency to it.

I measured the phase noise of three of them. All were between -75 and -78dBc/Hz at 1KHz offset. There were very large spurs at around 100Hz offset and also between 700 and 800Hz. These were between -50 and -60dBc/Hz. There were a few more large low frequency spurs as well.

The rubber pads on the bottom are a clear indication that these DROs were not well designed mechanically and exhibit a high degree of microphonics. Until I open one and inject an external reference frequency, I will not know whether the microphonics lie within the loop bandwidth or not. If they are outside of the loop bandwidth then mounting on foam will be necessary. If, on the other hand, the microphonics are within the loop bandwidth then using an external reference oscillator will solve the problem.

I will also need to do experimentation to determine whether the center frequency of the DRO can be moved and still have a reasonable temperature stability. Often when uncompensated techniques are used for moving the frequency, the stability becomes so poor that the oscillator can move outside of the lock range of the PLL when this is used mobile or outside in hot weather. Ovenizing the entire cavity is an option but this requires a lot of power and can reduce the reliability of the oscillator.

73,

Jeffrey Pawlan WA6KBL

12. DRO test results

Yahoo group: 24GHzHam
Date: 2007-03-08 05:19:49 UTC
From: Tony Long
Topic: 12 Message: 12

After seeing Jeffrey's test results I decided to test my oscillator and compare.

From every test I ran today, my CTI oscillator seems to be sufficient for CW/SSB operation at 24 GHz.

Here's what I did.

I powered up the oscillator at 1 pm and left it connected to a very good frequency counter which has been plugged in and warm for quite some time. I was 15 kHz low after 3 hours at which point the frequency counter showed that the drifting had stopped. It was moving around a tiny bit, but in the tens of Hz range, and did not have a trend one way or the other.

Next I decided to try to get it closer to being on frequency. Under the white label there is a screw that actually serves as a cap for a small Johansen tuning capacitor inside the DRO (see the photo of the DRO guts and look towards the right side of the main cavity, just below the crystal case). I tuned it easily across a few kHz, and left it about 4 kHz low.

Next I hooked it up to a spectrum analyzer with a phase noise measurement program on it. I generated the phase noise plot seen in the photos section. Phase noise looks terrific, at a 100 Hz offset it is -82.5 dBc/Hz, and 1 kHz its down to over -100 dbc/Hz.

In terms of spurs, I did a check for spurs but saw nothing. I didn't spend a lot of time looking for spurs so its possible there was something that I missed.

Finally I set the spectrum analyzer to the max-hold function and let it drift for 3 minutes. After three minutes it drifted less than 50 Hz. This is not a monotonic drift, this is back and forth. So this represents the instability of the oscillator, not a warm-up related drift. In any case, I believe these oscillators (if they are like mine) will do the job.

-Tony KC6QHP

17. CTI PDRO DRO Oscillator Data for the 24ghz Rigs

Yahoo group: 24GHzHam
Date: 2007-03-09 15:09:51 UTC
From: Frank Kelly
Topic: 17 Message: 17

Doug Miller, K6JEY, writes:

For you who are working on the 24ghz radios that come with a DRO oscillator-
I have a DRO by the same company and same general model but uses an
external reference.
I did some measuring of some of the parameters of my DRO. The
measurements probably apply to all the DRO's in the series. I have a
13.2ghz version with an external reference input.
I found that the DRO will tune from 13.136 to 13.7ghz.
It draws about 280ma.
If the voltage went below 13.15v the oscillator would not lock
With a 0dbm reference at 25mhz, the DRO would lock every 25mhz.
through the range.
Other reference frequencies can be used to make it lock on your
favorite frequency. I did not test it below 20 mhz.
Frequency stability was excellent. When locked, the frequency did
not drift more than 1hz from initial lock to over 5 minutes. (I used
separate standards- an hp8642A locked to a GPS stabilized source
[Odetics 325] to generate the reference signal and an EIP548 counter
locked to a CDMA stabilized rubidium source [Symmetricom 2700] to
measure the DRO output. Both are essentially GPS referenced but
separately disciplined and in comparison measurements show
differences in parts in 10-12th.)
I did not measure phase noise.
The output was 18mw and did not vary with input voltage.
There were no spurs or harmonics visible on the analyzer.
Looks like a pretty good oscillator, easy to use and easy to light up.

Doug K6JEY

21. PA stage gain

Yahoo group: 24GHzHam
Date: 2007-03-09 22:37:34 UTC
From: gm8bjf
Topic: 21 Message: 21

Dear SBMS,

I have been watching the group for the last couple of weeks. I took delivery of a couple of the transverter units from Kees earlier this week. I got round to setting one up with the necessary power supplies. To test the PA stage I have been feeding a signal into the Fil-out port on the PA stage and measuring the output. At 24,192 MHz it seems to have a gain of about 26 dB. I will check the power output capability later I is certainly happy chucking out 100mW but I can't drive it any harder at present.

73s

Brian,

GM8BJF
Edinburgh, UK

22. Fw: Thanks

Yahoo group: 24GHzHam
Date: 2007-03-13 15:27:20 UTC
From: Frank Kelly
Topic: 22 Message: 22

Dear Frank,

I have had the unit mixing up a 144 MHz signal with a 12,048 MHz LO to give about 0.7 Watt out on 24,192 MHz. The Filter re-tuned quite easily to 24,192 MHz. I wound all of the screws in 2 turns and was able to get enough of a signal through it to detect in on a power meter. This allowed me to tune it properly. I need to still retune the filter down to 24,048 as that is the European NB working frequency. The LOs I have are multiplier chains starting from 94 MHz xtals that I built earlier for a previous 24 GHz setup. I have now ordered a couple of the Hertley DRO units from Kees and will see if I can mod one of them to work about 12,025 GHz to give an IF about 500 MHz and then convert again to 144, with both LOs on the high side it will tune in the correct direction on 2m. (I use and old FT290 as my microwave IF). I will post and significant insights I gain to the group.

See: http://www.lothiansradiosociety.com

I was at our local club last night and a copuple of other people expressed interest so we might get some more activity as 24 GHz is quite lonely here!

73s,
Brian, GM8BJF.

23. Receive mode

Yahoo group: 24GHzHam
Date: 2007-03-13 17:00:42 UTC
From: Tony Long
Topic: 23 Message: 23

I managed to get my setup (as pictured in the YahooGroups photo section) working in receive mode last night. I used my old gunnplexer radio as a source and a 2m FM handheld for a receiver. The drift of the Gunn source is so bad that I didn't try to do more than just verify operation. I did manage to get a signal to the first IF (959 MHz) that was easily observed on my spectrum analyzer. With the second conversion, I received a signal with my handheld.

In receive mode, my entire setup consumes 16.4 watts. With just the Endwave and CTI modules on there own, 11.8 watts are consumed.

Out of the box, these modules are set up for continuous transmit and receive. To turn of the transmitter section, parallel resistors R145 and R145A need to be lifted on one end. These resistors are small green resistors that come off of the center (output) pin of the large voltage regulator at the top of the board. To do T/R switching, I am planning on putting a low on-resistance FET between the resistors and the regulator output pin.

In the files section of the YahooGroups site, I added an excel spreadsheet that indicates the power consumed by each section, the current requirement of each votlage rail, and total power consumed. Once I get a suitable 7v power supply I will fire up the transmit section as well.

-Tony KC6QHP

24. Receive DBM Image Reject Mixer

Yahoo group: 24GHzHam
Date: 2007-03-18 03:24:01 UTC
From: Frank Kelly
Topic: 24 Message: 24

Tony writes:

The mixer on the receive side is a double balanced image reject mixer which has 4 ports. There's an LO, RF and two IF ports. The chip actually has two mixers on it, and each one is fed an LO that is in hase or 90 degrees out of phase. When those two IF outputs are recombined in a 90 degree hybrid coupler, the result is that at one port of the coupler you get just the upper sideband and the other port you get the lower sideband. So you can switch between them dpending on which you want. The idea is that the image is rejected, thus a bandpass filter is not needed.
Tony

26. Re: [24GHzHam] Receive DBM Image Reject Mixer

Yahoo group: 24GHzHam
Date: 2007-03-18 13:46:23 UTC
From: Tony Long
Topic: 24 Message: 26

This is for the receive mixer only. Spurious emissions coming out the receive port will be extremely low regardless of the type of mixer used. There is a seperate path for the transmit side which includes a very good filter. Of the two that I have retuned so far, the LO and image are both around 70 dBc down from the 24.192 GHz signal. Note that these were both for IFs greater than or equal to 432 MHz. A plot of one of the filters can be seen n the Yahoogroups photo archive.

-Tony

>
>> Tony writes:
>>
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>> degree hybrid coupler, the result is that at one
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>> get just the upper sideband and the other port you
>> get the lower sideband.
>> So you can switch between them dpending on which you
>> want. The idea is
>> that the image is rejected, thus a bandpass filter
>> is not needed.
>> Tony
>>
>
>
> An image reject mixer cannot provide enough rejection
> over time and temperature to pass the FCC spurious
> emission rules. The amount of rejection drifts. You
> will need to provide some additional external
> filtering so that the image cannot cause interference
> with commercial licensed services outside of the
> amateur band. The PA (1-2w) will amplify this image
> just as well as the desired ham frequency.
>
> 73,
>
> Jeffrey Pawlan WA6KBL

>
>
>
>
> _____
> Now that's room service! Choose from over 150,000 hotels
> in 45,000 destinations on Yahoo! Travel to find your fit.
> http://farechase.yahoo.com/promo-generic-14795097
>

28. Image Reject Mixer

Yahoo group: 24GHzHam
Date: 2007-03-21 14:17:18 UTC
From: Brian Flynn
Topic: 28 Message: 28

I have been looking more closely at the Rx IF stages that are visible on the PCB and notice one or two points that may be of interest. The two down-converted outputs from the up/down converter block both enter the Minicircuits 2 way 90 degree Coupler (JSP2-406) and the two outputs from this go into an IC marked ASC02M2 (marked Z12 on PCB). This chip turns out to be a GaAs SPDT non-reflective switch and is wired to select either output from the Minicircuits coupler. This will make the IR mixer operate with either a high or low side LO depending upon which output is selected as the "signal". The next two stages the RF2312 (A1) and the RF2317 (A2) are simply gain stages en route to the IF out SMA. I have not yet figured out where the dc inputs to the control the switch are derived from but I suspect that the DIP switch may have something to do with them.

Has anybody figured this out??

Inspection of the data sheet bears this out as the tuning range of the Rx is 1 GHz, while that of the LO is only 300 MHz. In order to get the full coverage of this range, use will have to be made of High and Low side mixing.

I will post up a block diagram of the IF stages once I get time to draw them out a bit more neatly than my present sketches.

73s,
Brian, GM8BJF.

29. Re: [24GHzHam] Image Reject Mixer

Yahoo group: 24GHzHam
Date: 2007-03-22 01:18:48 UTC
From: Tony Long
Topic: 28 Message: 29

Switch #4 is the control switch for the SPDT switch. If you flip it back and forth you will notice a change in receive signal strength as expected. I have my transverter running in receive mode and flipped the switches back and forth to verify this. The remaining switches control the signal level going into the transmit mixer. Think of it as a 3-bit digital attenuator.

I am willing to bet that the ranges of the RX and LO are more than the spec sheet shows.

My plan uses a 959 MHz first IF and so far it works, though I haven't had the chance yet to measured overall conversion gain and noise figure. It could be that its not working _well_ due to the limited bandwidth of the 90 degree Mini Circuits hybrid. My plan if this is the case is to come up with another hybrid that has sufficient bandwidth. This scheme allows me to use the standard 12.5755 GHz DRO oscillator that came with these modules.

-Tony KC6QHP

> I have been looking more closely at the Rx IF stages that are visible
> on the PCB and notice one or two points that may be of interest. The
> two down-converted outputs from the up/down converter block both enter
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> Rx is 1 GHz, while that of the LO is only 300 MHz. In order to get the
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>
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> draw them out a bit more neatly than my present sketches.
>
> 73s,
> Brian, GM8BJF.

>
>

30. Transverters

Yahoo group: 24GHzHam
Date: 2007-03-21 23:08:30 UTC
From: Gary
Topic: 30 Message: 30

Hi all,
I am collectt parts for 24GHz and noticed your Yahoo group. This looks like and intesting project you have started, I wonder we I could source these parts.

73's Gary VK2KYP

31. New file uploaded to 24GHzHam

Yahoo group: 24GHzHam
Date: 2007-03-25 15:38:18 UTC
From: 24GHzHam@yahoogroups.com
Topic: 31 Message: 31

```
Hello,

This email message is a notification to let you know that
a file has been uploaded to the Files area of the 24GHzHam
group.

File : /block.pdf
Uploaded by : gm8bjf <brian.flynn@...>
Description : IF circuitry block diagram.

You can access this file at the URL:
http://groups.yahoo.com/group/24GHzHam/files/block.pdf

To learn more about file sharing for your group, please visit:
http://help.yahoo.com/help/us/groups/files

Regards,

gm8bjf <brian.flynn@...>
```

32. IF block diagram

Yahoo group: 24GHzHam
Date: 2007-03-25 21:28:45 UTC
From: Brian Flynn
Topic: 32 Message: 32

I have posted a block/circuit diagram to the files section of the signal paths for Tx and Rx of the unitss. There may be minor discrepancies but I think they give the gist of what happens.

73s
Brian, GM8BJF.

33. PDRO disassembly hints

Yahoo group: 24GHzHam
Date: 2007-04-12 08:10:57 UTC
From: w7glf
Topic: 33 Message: 33

Trying to get the top off the PDRO so far has been unsuccessful but if you have not started - a hint or two so you will be less destructive than I hav been. First what look like pop rivets are not. They turned out to be 1" long what looks like 2-56? screws with I guess some kind of hex head. They hold the base which acts as a heat sink to the actual PDRO. You probaby could just use small channel locks to grab and unscrew them.
Thinking they were pop rivets I drilled them out - big mistake - its off the McLendons to see if I can get replacement screws or at least see whether they are Metric thread. I suppose the base could be retapped for 4-40 screws. Secondly there are at least 4 screws under the label. I found 4 and took them off but I still have not gotten top off. Perhaps it needs prying. I will attack it some more tomorrow.

36. Re: PDRO disassembly hints

Yahoo group: 24GHzHam
Date: 2007-04-15 07:18:13 UTC
From: w7glf
Topic: 33 Message: 36

I finally got the top off - there was one more screw hiding under the labal which I found when I peeled of the label. There are 3 big ones which don't have to be removed (they are access holes for adjustments) and 2 tiny ones that do need to be removed. Anyway now I see the 100.604 MHz crystal. My next task is to remove it and try driving PDRO with 96.192 to see if it will oscillate at 12024. If that fails I do have a brick that will supply 12024 AT 10 dBm which I hope is enough to get some output once I get the power supplies built.

37. Re: [24GHzHam] Re: PDRO disassembly hints

Yahoo group: 24GHzHam
Date: 2007-04-15 13:32:52 UTC
From: Zack Widup
Topic: 33 Message: 37

I am working on a series of direct frequency synthesis LO's with the assistance of WA1ZMS based on his designs used for his 134 and 241 GHz QSO's. All these start with a 10 MHz OCXO and mix multiplied and divided frequencies to the desired LO frequency. For 24 GHz I plan on generating a 125.25 MHz LO frequency and multiply by 96 to get 12024.000.

This might be an option for a stable, low-noise source that can be used to replace the PDRO.

73, Zack W9SZ

On Sun, 15 Apr 2007, w7glf wrote:

> I finally got the top off - there was one more screw hiding under the
> labal which I found when I peeled of the label. There are 3 big ones
> which don't have to be removed (they are access holes for adjustments)
> and 2 tiny ones that do need to be removed. Anyway now I see the
> 100.604 MHz crystal. My next task is to remove it and try driving
> PDRO with 96.192 to see if it will oscillate at 12024. If that fails
> I do have a brick that will supply 12024 AT 10 dBm which I hope is
> enough to get some output once I get the power supplies built.
>

38. Power Supply

Yahoo group: 24GHzHam
Date: 2007-04-15 15:56:04 UTC
From: w7glf
Topic: 38 Message: 38

I am curious - in one of the files kc6qhp referred to using -5 volts rather than the -6 volts listed on the datasheet. Can I use -5? If so it would save me some work as I already have some 5 volt isolated dc/dc converters.

Also how critical is the 7.35? The datasheet does not give ranges so I was working on the assumption of +/- 5%.

39. Re: [24GHzHam] Power Supply

Yahoo group: 24GHzHam
Date: 2007-04-15 17:47:46 UTC
From: Tony Long
Topic: 38 Message: 39

-5 volts works fine.

The +7.35 volts is a bit misleading. Basically the requirement here is that it be high enough that it exceeds the regulator's dropout voltage. The regulator in question is the large three terminal Linear LT1083 next to the IF OUT connector. The datasheet lists the part as having a 1V dropout differential, so as long as you exceed that you are fine. I can't remember for sure, but I think the regualted drain supply is 5.4V. So as long as you have greater than 6.4 on the input you _should_ be fine. However its nice to have a little margain there, so go with 7 or 7.5 volts. Don't go much higher than that though, because you will start dissipating a lot of power in the regulator. For instance, 12 volts supplied to that point would work, but that would dissipate (12v-5.4v)*4.5amps = 29.7 watts which would kill the regulator pretty quickly, and heat up everything else.

-Tony KC6QHP

> I am curious - in one of the files kc6qhp referred to using -5 volts
> rather than the -6 volts listed on the datasheet. Can I use -5? If
> so it would save me some work as I already have some 5 volt isolated
> dc/dc converters.
>
> Also how critical is the 7.35? The datasheet does not give ranges so
> I was working on the assumption of +/- 5%.
>
>

40. Re: [24GHzHam] Power Supply

Yahoo group: 24GHzHam
Date: 2007-04-15 18:39:20 UTC
From: Frank Kelly
Topic: 38 Message: 40

Hi Tony,
Are you saying then that the 7.35V only connects to the input of the low dropout regulator?
Frank

41. RE: [24GHzHam] Power Supply

Yahoo group: 24GHzHam
Date: 2007-04-15 21:10:52 UTC
From: Robert H. Kendall
Topic: 38 Message: 41

Tony,
Is the+7.35 volt supply only used in TX? I am designing a switcher to supply the voltages for these modules. I could just as easily bypass the LT1083.

Bob WA6VHS

From: 24GHzHam@yahoogroups.com [mailto:24GHzHam@yahoogroups.com] On Behalf Of Tony Long
Sent: Sunday, April 15, 2007 10:48 AM
To: 24GHzHam@yahoogroups.com
Subject: Re: [24GHzHam] Power Supply

-5 volts works fine.

The +7.35 volts is a bit misleading. Basically the requirement here is that it be high enough that it exceeds the regulator's dropout voltage. The regulator in question is the large three terminal Linear LT1083 next to the IF OUT connector. The datasheet lists the part as having a 1V dropout differential, so as long as you exceed that you are fine. I can't remember for sure, but I think the regualted drain supply is 5.4V. So as long as you have greater than 6.4 on the input you _should_ be fine. However its nice to have a little margain there, so go with 7 or 7.5 volts. Don't go much higher than that though, because you will start dissipating a lot of power in the regulator. For instance, 12 volts supplied to that point would work, but that would dissipate (12v-5.4v)*4.5amps = 29.7 watts which would kill the regulator pretty quickly, and heat up everything else.

-Tony KC6QHP

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> so it would save me some work as I already have some 5 volt isolated
> dc/dc converters.
>
> Also how critical is the 7.35? The datasheet does not give ranges so
> I was working on the assumption of +/- 5%.
>
>

42. RE: [24GHzHam] Power Supply

Yahoo group: 24GHzHam
Date: 2007-04-15 21:22:37 UTC
From: Michael Aust
Topic: 38 Message: 42

There is a voltage interlock tied to the LT1083, so if
you defeat it, you could destory the MMICs with no
protective interlock upon turn-on
Mike

"Robert H. Kendall" <rhkendall@...> wrote:
Tony,
Is the+7.35 volt supply only used in TX? I am designing a switcher to supply the voltages for these modules. I could just as easily bypass the LT1083.

Bob WA6VHS

From: 24GHzHam@yahoogroups.com [mailto:24GHzHam@yahoogroups.com] On Behalf Of Tony Long
Sent: Sunday, April 15, 2007 10:48 AM
To: 24GHzHam@yahoogroups.com
Subject: Re: [24GHzHam] Power Supply

-5 volts works fine.

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that it be high enough that it exceeds the regulator's dropout voltage.
The regulator in question is the large three terminal Linear LT1083 next
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dropout differential, so as long as you exceed that you are fine. I can't
remember for sure, but I think the regualted drain supply is 5.4V. So as
long as you have greater than 6.4 on the input you _should_ be fine.
However its nice to have a little margain there, so go with 7 or 7.5
volts. Don't go much higher than that though, because you will start
dissipating a lot of power in the regulator. For instance, 12 volts
supplied to that point would work, but that would dissipate
(12v-5.4v)*4.5amps = 29.7 watts which would kill the regulator pretty
quickly, and heat up everything else.

-Tony KC6QHP

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> rather than the -6 volts listed on the datasheet. Can I use -5? If
> so it would save me some work as I already have some 5 volt isolated
> dc/dc converters.
>
> Also how critical is the 7.35? The datasheet does not give ranges so
> I was working on the assumption of +/- 5%.
>
>

43. RE: [24GHzHam] Power Supply

Yahoo group: 24GHzHam
Date: 2007-04-15 21:24:07 UTC
From: Michael Aust
Topic: 38 Message: 43

Be careful !

Michael Aust <ava622@...> wrote: There is a voltage interlock tied to the LT1083, so if you defeat it, you could destroy the MMICs with no
protective interlock upon turn-on
Mike

"Robert H. Kendall" <rhkendall@...> wrote:
Tony,
Is the+7.35 volt supply only used in TX? I am designing a switcher to supply the voltages for these modules. I could just as easily bypass the LT1083.

Bob WA6VHS

From: 24GHzHam@yahoogroups.com [mailto:24GHzHam@yahoogroups.com] On Behalf Of Tony Long
Sent: Sunday, April 15, 2007 10:48 AM
To: 24GHzHam@yahoogroups.com
Subject: Re: [24GHzHam] Power Supply

-5 volts works fine.

The +7.35 volts is a bit misleading. Basically the requirement here is that it be high enough that it exceeds the regulator's dropout voltage. The regulator in question is the large three terminal Linear LT1083 next to the IF OUT connector. The datasheet lists the part as having a 1V dropout differential, so as long as you exceed that you are fine. I can't remember for sure, but I think the regualted drain supply is 5.4V. So as long as you have greater than 6.4 on the input you _should_ be fine. However its nice to have a little margain there, so go with 7 or 7.5 volts. Don't go much higher than that though, because you will start dissipating a lot of power in the regulator. For instance, 12 volts supplied to that point would work, but that would dissipate (12v-5.4v)*4.5amps = 29.7 watts which would kill the regulator pretty quickly, and heat up everything else.

-Tony KC6QHP

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> so it would save me some work as I already have some 5 volt isolated
> dc/dc converters.
>
> Also how critical is the 7.35? The datasheet does not give ranges so
> I was working on the assumption of +/- 5%.
>

>

44. RE: [24GHzHam] Power Supply

Yahoo group: 24GHzHam
Date: 2007-04-15 21:54:08 UTC
From: Robert H. Kendall
Topic: 38 Message: 44

Hi Mike,
I assume it is interlocked for the -5 volt supply. I was intending to only supply the TX drain in transmit. Would that be ok?
Bob

From: 24GHzHam@yahoogroups.com [mailto:24GHzHam@yahoogroups.com] On Behalf Of Michael Aust
Sent: Sunday, April 15, 2007 2:24 PM
To: Michael Aust; 24GHzHam@yahoogroups.com
Subject: RE: [24GHzHam] Power Supply

Be careful !

Michael Aust <ava622@...> wrote:
There is a voltage interlock tied to the LT1083, so if you defeat it, you could destroy the MMICs with no protective interlock upon turn-on
Mike

"Robert H. Kendall" <rhkendall@...> wrote:
Tony,
Is the+7.35 volt supply only used in TX? I am designing a switcher to supply the voltages for these modules. I could just as easily bypass the LT1083.
Bob WA6VHS

From: 24GHzHam@yahoogroups.com [mailto:24GHzHam@yahoogroups.com] On Behalf Of Tony Long
Sent: Sunday, April 15, 2007 10:48 AM
To: 24GHzHam@yahoogroups.com
Subject: Re: [24GHzHam] Power Supply
-5 volts works fine.

The +7.35 volts is a bit misleading. Basically the requirement here is that it be high enough that it exceeds the regulator's dropout voltage. The regulator in question is the large three terminal Linear LT1083 next to the IF OUT connector. The datasheet lists the part as having a 1V dropout differential, so as long as you exceed that you are fine. I can't remember for sure, but I think the regualted drain supply is 5.4V. So as long as you have greater than 6.4 on the input you _should_ be fine. However its nice to have a little margain there, so go with 7 or 7.5 volts. Don't go much higher than that though, because you will start dissipating a lot of power in the regulator. For instance, 12 volts

supplied to that point would work, but that would dissipate (12v-5.4v)*4.5amps = 29.7 watts which would kill the regulator pretty quickly, and heat up everything else.

-Tony KC6QHP

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> rather than the -6 volts listed on the datasheet. Can I use -5? If
> so it would save me some work as I already have some 5 volt isolated
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>
> Also how critical is the 7.35? The datasheet does not give ranges so
> I was working on the assumption of +/- 5%.
>
>

45. RE: [24GHzHam] Power Supply

Yahoo group: 24GHzHam
Date: 2007-04-15 23:22:22 UTC
From: Tony Long
Topic: 38 Message: 45

+7.35V is used for both transmit and receive. In normal operation this unit transmits and receives simultaneously. As the board sits, there is no user transmit/receive switching. The best way to do it is to lift the current sense resistors on the transmit chain and switch it on and off. Switching the +7.35 will turn the whole module off or on.

-Tony

> Hi Mike,
> I assume it is interlocked for the -5 volt supply. I was intending to only
> supply the TX drain in transmit. Would that be ok?
> Bob
>
> _____
>
> From: 24GHzHam@yahoogroups.com [mailto:24GHzHam@yahoogroups.com] On Behalf
> Of Michael Aust
> Sent: Sunday, April 15, 2007 2:24 PM
> To: Michael Aust; 24GHzHam@yahoogroups.com
> Subject: RE: [24GHzHam] Power Supply
>
> Be careful !
>
> Michael Aust <ava622@...> wrote:
> There is a voltage interlock tied to the LT1083, so if
> you defeat it, you could destroy the MMICs with no
> protective interlock upon turn-on
> Mike
>
> "Robert H. Kendall" <rhkendall@...> wrote:
> Tony,
> Is the+7.35 volt supply only used in TX? I am designing a switcher to
> supply the voltages for these modules. I could just as easily bypass the
> LT1083.
> Bob WA6VHS
>
>
> _____
>
> From: 24GHzHam@yahoogroups.com [mailto:24GHzHam@yahoogroups.com] On Behalf
> Of Tony Long
> Sent: Sunday, April 15, 2007 10:48 AM
> To: 24GHzHam@yahoogroups.com
> Subject: Re: [24GHzHam] Power Supply
> -5 volts works fine.

>
> The +7.35 volts is a bit misleading. Basically the requirement here is
> that it be high enough that it exceeds the regulator's dropout voltage.
> The regulator in question is the large three terminal Linear LT1083 next
> to the IF OUT connector. The datasheet lists the part as having a 1V
> dropout differential, so as long as you exceed that you are fine. I can't
> remember for sure, but I think the regualted drain supply is 5.4V. So as
> long as you have greater than 6.4 on the input you _should_ be fine.
> However its nice to have a little margain there, so go with 7 or 7.5
> volts. Don't go much higher than that though, because you will start
> dissipating a lot of power in the regulator. For instance, 12 volts
> supplied to that point would work, but that would dissipate
> (12v-5.4v)*4.5amps = 29.7 watts which would kill the regulator pretty
> quickly, and heat up everything else.
>
> -Tony KC6QHP
>
>> I am curious - in one of the files kc6qhp referred to using -5 volts
>> rather than the -6 volts listed on the datasheet. Can I use -5? If
>> so it would save me some work as I already have some 5 volt isolated
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>>
>> Also how critical is the 7.35? The datasheet does not give ranges so
>> I was working on the assumption of +/- 5%.
>>
>>
>
>
>
>

46. RE: [24GHzHam] Power Supply

Yahoo group: 24GHzHam
Date: 2007-04-16 13:53:10 UTC
From: Michael Aust
Topic: 38 Message: 46

Bob,

As long as you Supply your +Tx voltage on the input of the LT1083
you are ok,

The reference terminal of the LT1083 has the -V interlock tied
to it, If the -V supply goes away, then the LT1083 shuts the +V
output off, protecting againt high drain current in case the -Vneg supply
disappears,

The -Vneg has a comparater driving a NPN (2N2222A), and the collector
of the 2N2222A is tied to the reference terminal of the LT1083 to provide
the voltage interlock between the -V and +V supplies.

If you apply +V after the LT1083 and the -V supply went away, you would have
defeated the protective voltage interlock that protects the MMICs from drawing
excesssive current. (Especially the PA MMICs, in the unit.)

Mike

"Robert H. Kendall" <rhkendall@...> wrote:
Hi Mike,
I assume it is interlocked for the -5 volt supply. I was intending to only supply the TX
drain in transmit. Would that be ok?
Bob

From: 24GHzHam@yahoogroups.com [mailto:24GHzHam@yahoogroups.com] On Behalf Of Michael Aust
Sent: Sunday, April 15, 2007 2:24 PM
To: Michael Aust; 24GHzHam@yahoogroups.com
Subject: RE: [24GHzHam] Power Supply

Be careful !

Michael Aust <ava622@...> wrote:
There is a voltage interlock tied to the LT1083, so if

you defeat it, you could destroy the MMICs with no

protective interlock upon turn-on

Mike

"Robert H. Kendall" <rhkendall@...> wrote:

Tony,

Is the+7.35 volt supply only used in TX? I am designing a switcher to supply the voltages for these modules. I could just as easily bypass the LT1083.

Bob WA6VHS

From: 24GHzHam@yahoogroups.com [mailto:24GHzHam@yahoogroups.com] On Behalf Of Tony Long
Sent: Sunday, April 15, 2007 10:48 AM
To: 24GHzHam@yahoogroups.com
Subject: Re: [24GHzHam] Power Supply

-5 volts works fine.

The +7.35 volts is a bit misleading. Basically the requirement here is that it be high enough that it exceeds the regulator's dropout voltage. The regulator in question is the large three terminal Linear LT1083 next to the IF OUT connector. The datasheet lists the part as having a 1V dropout differential, so as long as you exceed that you are fine. I can't remember for sure, but I think the regualted drain supply is 5.4V. So as long as you have greater than 6.4 on the input you _should_ be fine. However its nice to have a little margain there, so go with 7 or 7.5 volts. Don't go much higher than that though, because you will start dissipating a lot of power in the regulator. For instance, 12 volts supplied to that point would work, but that would dissipate (12v-5.4v)*4.5amps = 29.7 watts which would kill the regulator pretty quickly, and heat up everything else.

-Tony KC6QHP

> I am curious - in one of the files kc6qhp referred to using -5 volts
> rather than the -6 volts listed on the datasheet. Can I use -5? If
> so it would save me some work as I already have some 5 volt isolated
> dc/dc converters.
>
> Also how critical is the 7.35? The datasheet does not give ranges so
> I was working on the assumption of +/- 5%.
>
>

47. LO input circuit

Yahoo group: 24GHzHam
Date: 2007-04-20 21:35:50 UTC
From: Frank
Topic: 47 Message: 47

Tony or Mike, can one of you check the LO input circuit to see if there is a pad in the line. If so, how much loss is there?
I have some other LO sources that put out +12dBm.
Thanks,
Frank

48. Re: [24GHzHam] LO input circuit

Yahoo group: 24GHzHam
Date: 2007-04-23 16:52:12 UTC
From: Tony Long
Topic: 47 Message: 48

Only 6 dBm or so of LO drive is required. I don't think there is an attenuator in line. I think a coaxial attenuator was used in the real application of this module.

-Tony

> Tony or Mike, can one of you check the LO input circuit to see if there
> is a pad in the line. If so, how much loss is there?
> I have some other LO sources that put out +12dBm.
> Thanks,
> Frank
>
>

49. Feedback?

Yahoo group: 24GHzHam
Date: 2007-04-25 05:25:56 UTC
From: w7glf
Topic: 49 Message: 49

I am curious does anyone have the transverter in use? One of my concerns is that with the Tx and Rx on exactly the same frequency and the gains and isolation figures from the datasheet it seems as if there might be an opportunity for feedback on Tx unless the Rx is disabled.

50. Re: Feedback?

Yahoo group: 24GHzHam
Date: 2007-04-25 12:06:19 UTC
From: Brian Flynn
Topic: 49 Message: 50

--- In 24GHzHam@yahoogroups.com, "w7glf" <w7glf@...> wrote:
>
> I am curious does anyone have the transverter in use? One of my
> concerns is that with the Tx and Rx on exactly the same frequency and
> the gains and isolation figures from the datasheet it seems as if
> there might be an opportunity for feedback on Tx unless the Rx is
> disabled.
>

I have had my unit transceiving and have not had trouble with f/b. I am using a coax relay to switch between the Tx input and The Rx output as I was also concerned about f/b. I found that the power splitter scheme outlined in the diagram on this group was prone to f/b as the resistive splitter I used provided a feedback path. The scheme I use is to mix down to 1103 (The European NB section is at 24,048-50) and mix again with 1248 MHz to give 145MHz. I do have some concerns about using such a high IF as I suspect the that the IR mixer on receive may be somewhat compromised. The Mini-circuits 90 degree receive IF hybrid is only specced to 405 MHz. I have not had any actual contacts with it yet as there is no local activity here in Scotland, but a couple of other people locally have bought these units as well. I get about half a watt of tx output and I can hear the noise level change if I place a finger on the Rx input WG.

73s
Brian, GM8BJF.

51. Re: [24GHzHam] Re: Feedback?

Yahoo group: 24GHzHam
Date: 2007-04-25 12:15:51 UTC
From: Zack Widup
Topic: 49 Message: 51

On Wed, 25 Apr 2007, Brian Flynn wrote:

> --- In 24GHzHam@yahoogroups.com, "w7glf" <w7glf@...> wrote:
> >
> > I am curious does anyone have the transverter in use? One of my
> > concerns is that with the Tx and Rx on exactly the same frequency and
> > the gains and isolation figures from the datasheet it seems as if
> > there might be an opportunity for feedback on Tx unless the Rx is
> > disabled.
> >
>
> I have had my unit transceiving and have not had trouble with f/b. I
> am using a coax relay to switch between the Tx input and The Rx output
> as I was also concerned about f/b. I found that the power splitter
> scheme outlined in the diagram on this group was prone to f/b as the
> resistive splitter I used provided a feedback path.

I've been curious what kind of losses can be expected from an SMA relay. I have a box of brand-new Transco SMA relays I bought on eBay a couple years ago which seem to do fine through 10 GHz. I measured the loss at 10 GHz and it was almost not discernable on my HP435B power meter (0.1 dB maybe?) So I figure they should be usable at 24 GHz.

73, Zack W9SZ

52. Re: [24GHzHam] Feedback?

Yahoo group: 24GHzHam
Date: 2007-04-25 15:23:22 UTC
From: Frank Kelly
Topic: 49 Message: 52

My understanding is these radios were made for full duplex operation. There is DC power applied continuously to both the transmitter and receiver sections. There should be no reason to run them this way in our application. We want to operate them in a conventional simplex mode.

While someone needs to work out the specifics on this, the idea is to locate, break, and then alternately switch the DC power lines under T-R control. One has to be careful that the negative GaAsFET voltage is applied to the devices before they are powered, either sequenced (so that bias is first applied and last removed), or left continuously on.

Tony or Mike can tell us more about this, but I understood that the RX section also has some GaAsFET devices so the T- R switching takes some thought.

This T-R switching modification appears to be the only significant work necessary for our application. Hopefully someone will dig into the problem, solve it, and then post the specific component level solution for us all to follow.

Frank WB6CWN

----- Original Message -----
From: w7glf
To: 24GHzHam@yahoogroups.com
Sent: Tuesday, April 24, 2007 10:25 PM
Subject: [24GHzHam] Feedback?

I am curious does anyone have the transverter in use? One of my concerns is that with the Tx and Rx on exactly the same frequency and the gains and isolation figures from the datasheet it seems as if there might be an opportunity for feedback on Tx unless the Rx is disabled.

54. testing and simplexing

Yahoo group: 24GHzHam
Date: 2007-04-25 16:24:25 UTC
From: Jeffrey Pawlan
Topic: 54 Message: 54

I assume others in So Calif have already received their 24GHz units. Mine were delayed so I cannot say how to turn the radio into simplex but we must be very very careful to not interrupt the negative bias voltage during receive. Usually leaving the neg bias voltage on all the time has no ill effects. Mike, please let us know if this is not the case for this particular mimic.

A more basic question: have the other owners in So Calif benchtested their boards yet and can you each post the unmodified power output and the receive NF you are getting? These will be the starting points to show whether an unmodified board is fully functional and also to later help us know if we messed anything up in our conversions. (I mean real testing not the datasheet numbers)

73,

Jeffrey Pawlan WA6KBL

_____
Do You Yahoo!?
Tired of spam? Yahoo! Mail has the best spam protection around
http://mail.yahoo.com

56. Finally a carrier on Rx

Yahoo group: 24GHzHam
Date: 2007-05-05 06:29:30 UTC
From: w7glf
Topic: 56 Message: 56

I have spent a lot of time battling unstable LOs. Finally got a 10 GHz MACOM brick oscillating on 11880. With a loaner 24 Ghz station from KD7TS I finally have managed to hear a CW note where before all I was hearing is a buzz. Just goes to show there is no beating a crystal oscillator for purity. My VCXO idea looked nice on the spectrum analyzer (such as it is - a 491A) and stable on the counter but it was bouncing around enough (even though phased locked to a GPS) that I was beginning to think the 24 GHz transverter was sicko. Now on to very low power Tx testing once I get my heftier 7.35 supply done built. Thanks for the posts on this site - they have helped immensely.

57. TX-RX PCB modification

Yahoo group: 24GHzHam
Date: 2007-05-07 04:28:34 UTC
From: Frank WB6CWN
Topic: 57 Message: 57

Mike, WB6DJI, sent several jpgs he got from PyroJoe which I just posted in the pictures. The photo shows the low value current sense resistors, one in the TX DC power feed, the other in the RX line, that can be pulled and replaced with FET switches to provide for RX-TX switching (half duplex). Resistors R145 and R145A are both 0.022 ohm resistors in parallel. Side A has 2 pads (can be strapped together) for one common connection, other side(Pin2). Between these two points, place P-channel in series as described in photo.

The other photo shows the which screws should not be touched else there can be damage to the internal MMICs.

Frank WB6CWN

59. FET switches available on Ebay

Yahoo group: 24GHzHam
Date: 2007-05-07 05:32:18 UTC
From: mike
Topic: 59 Message: 59

See link, these are the FET P=channel switches on Ebay

Item number: 7537026231

seller : rfextra

http://cgi.ebay.com/Fairchild-P-Channel-7-5A-30V-Power-FET-NDT456P-50pcs_W0QQitemZ7537026231QQihZ017QQcategoryZ4666QQrdZ1QQssPageNameZWD1VQQcmdZViewItem

Mike

WB6DJI

61. Re: [24GHzHam] Finally a carrier on Rx

Yahoo group: 24GHzHam
Date: 2007-05-07 14:20:26 UTC
From: Zack Widup
Topic: 56 Message: 61

I have been working with LO's through 10 GHz for some time. The best arrangement I have used so far is the KD6OZH low-noise PLL scheme that appeared in QEX in the Nov/Dec 1999 issue. The only trouble with this has been that the MC12015 through 12022 dual-modulus prescalers have been very difficult to find. I got some SMD prescalers, MC12033 and 12038, at eBay a while back but they have problems in themselves. The MC12033 divides by 32/33 and 64/65 but its useful operating range is specified as 400 MHz to 2 GHz. It doesn't count very well at 125 MHz. The MC12038 works better at ~100 MHz but the division ratios are 127/128 and 255/256. It's difficult to find divisors that work with most crystal frequencies at those higher numbers.

Anyway, I did get a handful of MC12015-017-019 chips and have used these in all my transverters from 2304 through 10368 and they are very clean, stable and accurate when phase-locked to a 10 MHz OCXO. I used the oscillator circuit by KD6OZH in a few of these LO's but then also tried the circuit used by Darrell VE1ALQ which he has on his website:

http://www.ve1alq.com/downloads/pll/uhf_pll.html

One advantage of this circuit is the adjustable output power. I have gotten as much as +20 dBm out of these boards, and it can be adjusted down to about -5 dBm. They seem to be as stable and clean as the KD6OZH circuit.

I have been fighting with the "reflock" and "versatile CPLD" PLL circuits for some time and just can't get them to work to my satisfaction. Part of the problem is the tuning output voltage range, which is only about 4 volts. The KD6OZH circuit has a 10-volt useful tuning voltage range. Maybe I just need to spend more time with this but there are only so many hours in a day/week. :-(

My own thought is to do away with the Frequency West, etc., bricks and just make my own multiplier using the VCXO phase-locked output and multiply it up to 24 GHz with my own circuits. This works well at 10 GHz with 106.5 X 2 X 3 X 4 X 4 = 10224 MHz. I'm going to try this at 24 GHz with a 144 MHz IF with 125.25 X 2 X 3 X 2 X 2 X 4 = 12024 MHz, doubling again to 24048 MHz.

I think this will work. We'll see.

73, Zack W9SZ

On Sat, 5 May 2007, w7glf wrote:

> I have spent a lot of time battling unstable LOs. Finally got a 10
> GHz MACOM brick oscillating on 11880. With a loaner 24 Ghz station

> from KD7TS I finally have managed to hear a CW note where before all I
> was hearing is a buzz. Just goes to show there is no beating a
> crystal oscillator for purity. My VCXO idea looked nice on the
> spectrum analyzer (such as it is - a 491A) and stable on the counter
> but it was bouncing around enough (even though phased locked to a GPS)
> that I was beginning to think the 24 GHz transverter was sicko. Now
> on to very low power Tx testing once I get my heftier 7.35 supply done
> built. Thanks for the posts on this site - they have helped immensely.
>

62. Re: Finally a carrier on Rx

Yahoo group: 24GHzHam
Date: 2007-05-08 03:51:35 UTC
From: w7glf
Topic: 56 Message: 62

I will be curious to hear out it turns out. I have used a VE1ALQ LM2306 board to ref lock my 10 GHz and since I bought two I am using the second one to Ref Lock the Macom brick for 24 GHz. It seems pretty clean but I am noticing some lower level signals spaced the comparison frequency apart on Rx. Once I get Tx up I will need to see how bad they really are. My comparison freq is only 147 KHz due to funky crystal at 98.907969 that came in the brick (I am pulling it to 98.907588) - with 10 Hz loop filter it locks reliably although it sometimes takes a second or two due to cycle slippage. I had the caps for the 10 Hz filter which is why it is so tight.

Before I was trying to use a Crystek VCO (110 - 150 Mhz) from Mouser with the LM2306 and although it looked fine on the counter and analyzer it just wandered around too much for SSB and CW.

For others the Macom PLX31 works well on 11880 (99 MHz XTAL if you can find one). I am getting 8dBm out - the cavity is adjusted almost all of the way recessed and it takes some futzing to get multplier adjusted for 11.8 GHz but with perserverance it can be done. I have not filed any of the posts and probably won't bother - plenty of LO according to other postings on this list.

--- In 24GHzHam@yahoogroups.com, Zack Widup <w9sz@...> wrote:
>
>
> I have been working with LO's through 10 GHz for some time. The best
> arrangement I have used so far is the KD6OZH low-noise PLL scheme that
> appeared in QEX in the Nov/Dec 1999 issue. The only trouble with
this has
> been that the MC12015 through 12022 dual-modulus prescalers have been
> very difficult to find. I got some SMD prescalers, MC12033 and
12038, at
> eBay a while back but they have problems in themselves. The MC12033
> divides by 32/33 and 64/65 but its useful operating range is
specified as
> 400 MHz to 2 GHz. It doesn't count very well at 125 MHz. The MC12038
> works better at ~100 MHz but the division ratios are 127/128 and
255/256.
> It's difficult to find divisors that work with most crystal frequencies
> at those higher numbers.
>
> Anyway, I did get a handful of MC12015-017-019 chips and have used
these
> in all my transverters from 2304 through 10368 and they are very clean,
> stable and accurate when phase-locked to a 10 MHz OCXO. I used the
> oscillator circuit by KD6OZH in a few of these LO's but then also tried

> the circuit used by Darrell VE1ALQ which he has on his website:
>
> http://www.ve1alq.com/downloads/pll/uhf_pll.html
>
> One advantage of this circuit is the adjustable output power. I have
> gotten as much as +20 dBm out of these boards, and it can be
adjusted down
> to about -5 dBm. They seem to be as stable and clean as the KD6OZH
> circuit.
>
> I have been fighting with the "reflock" and "versatile CPLD" PLL
circuits
> for some time and just can't get them to work to my satisfaction.
Part of
> the problem is the tuning output voltage range, which is only about 4
> volts. The KD6OZH circuit has a 10-volt useful tuning voltage range.
> Maybe I just need to spend more time with this but there are only so
many
> hours in a day/week. :-(
>
> My own thought is to do away with the Frequency West, etc., bricks and
> just make my own multiplier using the VCXO phase-locked output and
> multiply it up to 24 GHz with my own circuits. This works well at
10 GHz
> with 106.5 X 2 X 3 X 4 X 4 = 10224 MHz. I'm going to try this at 24 GHz
> with a 144 MHz IF with 125.25 X 2 X 3 X 2 X 2 X 4 = 12024 MHz, doubling
> again to 24048 MHz.
>
> I think this will work. We'll see.
>
> 73, Zack W9SZ
>

63. Re: TX-RX PCB modification

Yahoo group: 24GHzHam
Date: 2007-05-08 05:13:52 UTC
From: w7glf
Topic: 57 Message: 63

I am curious how critical the 5.4 volt output of the regulator is. I have an IRF9540 which is asking to be used but I note the worst case "ON" resistance is .2 ohms. At 5 amps this would be a 1 volt drop which seems pretty high.

--- In 24GHzHam@yahoogroups.com, "Frank WB6CWN" <fm.kelly@...> wrote:
>
> Mike, WB6DJI, sent several jpgs he got from PyroJoe which I just
> posted in the pictures. The photo shows the low value current sense
> resistors, one in the TX DC power feed, the other in the RX line, that
> can be pulled and replaced with FET switches to provide for RX-TX
> switching (half duplex). Resistors R145 and R145A are both 0.022 ohm
> resistors in parallel. Side A has 2 pads (can be strapped together)
> for one common connection, other side(Pin2). Between these two points,
> place P-channel in series as described in photo.
>
> The other photo shows the which screws should not be touched else
> there can be damage to the internal MMICs.
>
> Frank WB6CWN
>

64. Re: Finally a carrier on Rx

Yahoo group: 24GHzHam
Date: 2007-05-08 05:59:54 UTC
From: w7glf
Topic: 56 Message: 64

I goofed up I meant 98.970588 for an IF at ~439.160. And I think the spurs are coming coming the test source and not my PLL. They are much too close in freq.

Useful info: I tried my weak signal source - one of PyroJoe's 8 GHz bricks using the crystal it came with (the ubiquitous 101.675) retuned to 12099.137 for a second harmonic on 24.198275. It works great as a S8+ signal source. No spurs can be heard which agrees with WebBench's estimate of -102 dB down. Amazing how useful the 101.675 crystal is - it makes a great not so weak signal source on 10.370 Ghz also.

--- In 24GHzHam@yahoogroups.com, "w7glf" <w7glf@...> wrote:
>
> I will be curious to hear out it turns out. I have used a VE1ALQ
> LM2306 board to ref lock my 10 GHz and since I bought two I am using
> the second one to Ref Lock the Macom brick for 24 GHz. It seems
> pretty clean but I am noticing some lower level signals spaced the
> comparison frequency apart on Rx. Once I get Tx up I will need to see
> how bad they really are. My comparison freq is only 147 KHz due to
> funky crystal at 98.907969 that came in the brick (I am pulling it to
> 98.907588) - with 10 Hz loop filter it locks reliably although it
> sometimes takes a second or two due to cycle slippage. I had the caps
> for the 10 Hz filter which is why it is so tight.
>
> Before I was trying to use a Crystek VCO (110 - 150 Mhz) from Mouser
> with the LM2306 and although it looked fine on the counter and
> analyzer it just wandered around too much for SSB and CW.
>
> For others the Macom PLX31 works well on 11880 (99 MHz XTAL if you can
> find one). I am getting 8dBm out - the cavity is adjusted almost all
> of the way recessed and it takes some futzing to get multplier
> adjusted for 11.8 GHz but with perserverance it can be done. I have
> not filed any of the posts and probably won't bother - plenty of LO
> according to other postings on this list.
>

65. Re: [24GHzHam] TX-RX block diagram

Yahoo group: 24GHzHam
Date: 2007-05-08 17:02:46 UTC
From: Jeffrey Pawlan
Topic: 65 Message: 65

especially to Mike and Tony who know a great deal
about these modules, but please anyone reply to this
list:

Can someone post at least an approximate diagram of
the RF sections both TX and RX? It is unclear how the
waveguide filter is being used in the unmodified
circuit. Perhaps for our simplex use of this module,
some performance improvement can be made by
eliminating the fiter. We need to know how it is
hooked up to possibly bypass it.

Question 2: Tony's breadboard is using a much higher
IF frequency than is specified in the Endwave PDF
which says Tx IF: 450-650MHz and Rx IF: 150-250MHz. I
do not have data sheets for the hybrids. Can anyone
confirm that these are the optimal IF frequency ranges
for best quadrature balance? And why did they make
the Rx and Tx IFs so different?

73,

Jeffrey Pawlan WA6KBL

8:00? 8:25? 8:40? Find a flick in no time
with the Yahoo! Search movie showtime shortcut.
http://tools.search.yahoo.com/shortcuts/#news

66. What are the Final amps TGA9070?

Yahoo group: 24GHzHam
Date: 2007-05-09 04:25:11 UTC
From: w7glf
Topic: 66 Message: 66

Are the two finals TGA9070 or something else?

67. Re: What are the Final amps TGA9070?

Yahoo group: 24GHzHam
Date: 2007-05-10 17:44:15 UTC
From: Frank WB6CWN
Topic: 66 Message: 67

--- In 24GHzHam@yahoogroups.com, "w7glf" <w7glf@...> wrote:
Are the two finals TGA9070 or something else?

Interesting question. The TGA9070 is characterized with a 7V drain supply. It may not be getting 7V if its supply comes through the low dropout regulator.
Frank

68. Re: [24GHzHam] waveguide filter tuning screws

Yahoo group: 24GHzHam
Date: 2007-05-14 02:29:26 UTC
From: Jeffrey Pawlan
Topic: 28 Message: 68

I carefully tuned two of the three waveguide filters
that I received. I found that the pass characteristic
is really a highpass more than a bandpass because the
lower skirt is much steeper than the upper skirt.

In order to help people get their filters nearly on
frequency with less effort, I have measured the
protruding screw lengths so you can compare yours.

The measurements are referred to the top of the
waveguide where the locking nuts are sitting.
Screw 1 is on the input side with the isolator.

untuned filter screw lengths:
1 2 3 4 5 6
.1665 .1565 .1565 .1555 .1620 .1660

tuned filter #1
.1340 .1330 .1305 .1330 .1360 .1355

tuned filter #2
.1360 .1255 .1285 .1320 .1320 .1340

73,

Jeffrey Pawlan WA6KBL

_____Got a
little couch potato?
Check out fun summer activities for kids.
http://search.yahoo.com/search?fr=oni_on_mail&p=summer+activities+for+kids&cs=bz

69. New file uploaded to 24GHzHam

Yahoo group: 24GHzHam
Date: 2007-05-16 17:43:48 UTC
From: 24GHzHam@yahoogroups.com
Topic: 31 Message: 69

```
Hello,

This email message is a notification to let you know that
a file has been uploaded to the Files area of the 24GHzHam
group.

File : /Verticom MTS1500 programmer.pdf
Uploaded by : wb6cwn <fm.kelly@...>
Description : Verticom MTS 1500 Synthesizer PIC programmer

You can access this file at the URL:
http://groups.yahoo.com/group/24GHzHam/files/Verticom%20MTS1500%20programmer.pdf

To learn more about file sharing for your group, please visit:
http://help.yahoo.com/help/us/groups/files

Regards,

wb6cwn <fm.kelly@...>
```

70. Re: [24GHzHam] New file uploaded to 24GHzHam

Yahoo group: 24GHzHam
Date: 2007-05-16 20:24:19 UTC
From: Zack Widup
Topic: 31 Message: 70

Thanks Frank.

Is the source code for the PIC available?

Zack W9SZ

On 16 May 2007 24GHzHam@yahoogroups.com wrote:

>
> Hello,
>
> This email message is a notification to let you know that
> a file has been uploaded to the Files area of the 24GHzHam
> group.
>
> File : /Verticom MTS1500 programmer.pdf
> Uploaded by : wb6cwn <fm.kelly@...>
> Description : Verticom MTS 1500 Synthesizer PIC programmer
>
> You can access this file at the URL:
> http://groups.yahoo.com/group/24GHzHam/files/Verticom%20MTS1500%20programmer.pdf
>
> To learn more about file sharing for your group, please visit:
> http://help.yahoo.com/help/us/groups/files
>
> Regards,
>
> wb6cwn <fm.kelly@...>
>

71. Re: Re: [24GHzHam] New file uploaded to 24GHzHam

Yahoo group: 24GHzHam
Date: 2007-05-16 20:37:39 UTC
From: Frank Kelly
Topic: 31 Message: 71

Zack,
That's a question for the designer.
I belive Dave is going to make PIC and board available, but I don't know about the PIC code.
We'll ask him here.
Frank

==========
From: Zack Widup <w9sz@...>
Date: 2007/05/16 Wed PM 03:24:19 CDT
To: 24GHzHam@yahoogroups.com
Subject: Re: [24GHzHam] New file uploaded to 24GHzHam

Thanks Frank.

Is the source code for the PIC available?

Zack W9SZ

On 16 May 2007 24GHzHam@yahoogroups.com wrote:

>
> Hello,
>
> This email message is a notification to let you know that
> a file has been uploaded to the Files area of the 24GHzHam
> group.
>
> File : /Verticom MTS1500 programmer.pdf
> Uploaded by : wb6cwn <fm.kelly@...>
> Description : Verticom MTS 1500 Synthesizer PIC programmer
>
> You can access this file at the URL:
> http://groups.yahoo.com/group/24GHzHam/files/Verticom%20MTS1500%20programmer.pdf
>
> To learn more about file sharing for your group, please visit:
> http://help.yahoo.com/help/us/groups/files
>
> Regards,
>
> wb6cwn <fm.kelly@...>
>

72. New file uploaded to 24GHzHam

Yahoo group: 24GHzHam
Date: 2007-05-16 20:55:27 UTC
From: 24GHzHam@yahoogroups.com
Topic: 31 Message: 72

```
Hello,

This email message is a notification to let you know that
a file has been uploaded to the Files area of the 24GHzHam
group.

File : /mts1500.asm
Uploaded by : rhkendall <rhkendall@...>
Description : Verticom programming code

You can access this file at the URL:
http://groups.yahoo.com/group/24GHzHam/files/mts1500.asm

To learn more about file sharing for your group, please visit:
http://help.yahoo.com/help/us/groups/files

Regards,

rhkendall <rhkendall@...>
```

73. Verticom programming

Yahoo group: 24GHzHam
Date: 2007-05-16 20:57:15 UTC
From: Bob Kendall WA6VHS
Topic: 73 Message: 73

I just uploaded the programming code from Dave Robinson for the Verticom synthesizers.

74. Re: [24GHzHam] New file uploaded to 24GHzHam

Yahoo group: 24GHzHam
Date: 2007-05-16 21:12:48 UTC
From: Zack Widup
Topic: 31 Message: 74

That was quick! Thanks muchly!

Zack W9SZ

On 16 May 2007 24GHzHam@yahoogroups.com wrote:

>
> Hello,
>
> This email message is a notification to let you know that
> a file has been uploaded to the Files area of the 24GHzHam
> group.
>
> File : /mts1500.asm
> Uploaded by : rhkendall <rhkendall@...>
> Description : Verticom programming code
>

75. code for programing verticom

Yahoo group: 24GHzHam
Date: 2007-05-17 00:46:54 UTC
From: waqyrridge
Topic: 75 Message: 75

Frank- I see the WW2R code is for 47 GHz not the 24 ghz. At the last SBMS meeting Chris N9RIN had a small board for programming the verticom. He said it could be programed while in socket. Maybe we need to get Chris info on the messages??? Bill WA6QYR

76. Re: [24GHzHam] code for programing verticom

Yahoo group: 24GHzHam
Date: 2007-05-17 01:24:35 UTC
From: Frank Kelly
Topic: 75 Message: 76

Bill,
The latest WW2R PIC code will load two different frequencies into the Verticom synthesizers depending on the switching setting. One is for 11.88Ghz for use with the Endwave units and a 432MHz IF, the other frequency produced is 11.7720833 which, when multiplied X4, produces 47.088333GHz for beacon use.
Frank

----- Original Message -----
From: waqyrridge
To: 24GHzHam@yahoogroups.com
Sent: Wednesday, May 16, 2007 5:46 PM
Subject: [24GHzHam] code for programing verticom

Frank- I see the WW2R code is for 47 GHz not the 24 ghz. At the last SBMS meeting Chris N9RIN had a small board for programming the verticom. He said it could be programed while in socket. Maybe we need to get Chris info on the messages??? Bill WA6QYR

77. Re: [24GHzHam] code for programing verticom

Yahoo group: 24GHzHam
Date: 2007-05-17 01:29:37 UTC
From: Frank Kelly
Topic: 75 Message: 77

OK Bill. I looked at the code and you are correct. The code Bob posted for us was written a couple of years ago for MUD and produces 47GHz beacon frequencies with both switch settings. I'll ask WW2R for an update and post it. Glad you caught this--good eye.
Frank

----- Original Message -----
From: waqyrridge
To: 24GHzHam@yahoogroups.com
Sent: Wednesday, May 16, 2007 5:46 PM
Subject: [24GHzHam] code for programing verticom

Frank- I see the WW2R code is for 47 GHz not the 24 ghz. At the last SBMS meeting Chris N9RIN had a small board for programming the verticom. He said it could be programed while in socket. Maybe we need to get Chris info on the messages??? Bill WA6QYR

78. Re: [24GHzHam] code for programing verticom

Yahoo group: 24GHzHam
Date: 2007-05-17 03:35:06 UTC
From: Zack Widup
Topic: 75 Message: 78

There's a switch on pin 3 I believe that selects between output at 11.880 (24 GHz with a 432 MHz IF) and the 47088.333 MHz beacon frequency. It's in the code.

73, Zack W9SZ

On Thu, 17 May 2007, waqyrridge wrote:

> Frank- I see the WW2R code is for 47 GHz not the 24 ghz. At the last
> SBMS meeting Chris N9RIN had a small board for programming the
> verticom. He said it could be programed while in socket. Maybe we need
> to get Chris info on the messages??? Bill WA6QYR
>
>
>
>
> Yahoo! Groups Links
>
>
>
>

79. Re: [24GHzHam] code for programing verticom

Yahoo group: 24GHzHam
Date: 2007-05-17 03:58:41 UTC
From: Frank Kelly
Topic: 75 Message: 79

Zack,

The problem is the code Bob posted is from MUD a couple years ago and has both frequencies for 47GHz operation. The header reads:
;11772.08333 gives 47088.3333333
;11663.75 gives 46655 (433 IF for 47088)

One of us could modify the code, but you have to derive the new programming word. WW2R wrote an Excel spreadsheet for that task as well, but since he's already got new code with 11.88GHz done, I asked him to forward it for posting--hopefully tomorrow.

Frank

----- Original Message -----
From: Zack Widup
To: 24GHzHam@yahoogroups.com
Sent: Wednesday, May 16, 2007 8:35 PM
Subject: Re: [24GHzHam] code for programing verticom

There's a switch on pin 3 I believe that selects between output at 11.880
(24 GHz with a 432 MHz IF) and the 47088.333 MHz beacon frequency. It's
in the code.

73, Zack W9SZ

On Thu, 17 May 2007, waqyrridge wrote:

> Frank- I see the WW2R code is for 47 GHz not the 24 ghz. At the last
> SBMS meeting Chris N9RIN had a small board for programming the
> verticom. He said it could be programed while in socket. Maybe we need
> to get Chris info on the messages??? Bill WA6QYR
>
>
>
>
> Yahoo! Groups Links
>
>
>
>

80. Re: [24GHzHam] code for programing verticom

Yahoo group: 24GHzHam
Date: 2007-05-17 13:35:28 UTC
From: Zack Widup
Topic: 75 Message: 80

Whoops! I see.

Zack W9SZ

On Wed, 16 May 2007, Frank Kelly wrote:

> Zack,
>
> The problem is the code Bob posted is from MUD a couple years ago and has both frequencies for 47GHz operation. The header reads:
> ;11772.08333 gives 47088.3333333
> ;11663.75 gives 46655 (433 IF for 47088)
>
> One of us could modify the code, but you have to derive the new programming word. WW2R wrote an Excel spreadsheet for that task as well, but since he's already got new code with 11.88GHz done, I asked him to forward it for posting--hopefully tomorrow.
>
> Frank
>

81. Re: code for programing verticom

Yahoo group: 24GHzHam
Date: 2007-05-17 16:23:22 UTC
From: ww2r_dave
Topic: 75 Message: 81

i will post the new "CA" code version and the .xls for putting it on other frequencies from home tonight, they are not on my works computer. Note not all frequencies are possible

Dave

ww2r

--- In 24GHzHam@yahoogroups.com, Zack Widup <w9sz@...> wrote:
>
>
> Whoops! I see.
>
> Zack W9SZ
>
> On Wed, 16 May 2007, Frank Kelly wrote:
>
> > Zack,
> >
> > The problem is the code Bob posted is from MUD a couple years ago and has both frequencies for 47GHz operation. The header reads:
> > ;11772.08333 gives 47088.3333333
> > ;11663.75 gives 46655 (433 IF for 47088)
> >
> > One of us could modify the code, but you have to derive the new programming word. WW2R wrote an Excel spreadsheet for that task as well, but since he's already got new code with 11.88GHz done, I asked him to forward it for posting--hopefully tomorrow.
> >
> > Frank
> >
>

82. New file uploaded to 24GHzHam

Yahoo group: 24GHzHam
Date: 2007-05-18 03:04:09 UTC
From: 24GHzHam@yahoogroups.com
Topic: 31 Message: 82

```
Hello,

This email message is a notification to let you know that
a file has been uploaded to the Files area of the 24GHzHam
group.

File : /Verticom_dual_24_47.asm
Uploaded by : ww2r_dave <ww2r@...>
Description : code for pic for dual frequencies

You can access this file at the URL:
http://groups.yahoo.com/group/24GHzHam/files/Verticom_dual_24_47.asm

To learn more about file sharing for your group, please visit:
http://help.yahoo.com/help/us/groups/files

Regards,

ww2r_dave <ww2r@...>
```

83. Verticom frequency calculation spreadsheet

Yahoo group: 24GHzHam
Date: 2007-05-18 03:14:19 UTC
From: ww2r_dave
Topic: 83 Message: 83

The excel spreadsheet that one can use to calculate what frequencies the mts1500e-151-01 can produce is downloadable at:-

http://www.g4fre.com/mts1500xls.zip

Ensure you have the analysis addin loaded in .xls, otherwise it wont work as it needs if for the hex/binary/decimal conversions

Dave

84. Re: TX-RX block diagram

Yahoo group: 24GHzHam
Date: 2007-05-18 14:11:50 UTC
From: ww2r_dave
Topic: 65 Message: 84

so they can run full duplex and put the rx and tx IF signals up a
single rf cable

>
> Question 2: And why did they make
> the Rx and Tx IFs so different?
>
>
> 73,
>
> Jeffrey Pawlan WA6KBL
>
>
>
>
>

> 8:00? 8:25? 8:40? Find a flick in no time
> with the Yahoo! Search movie showtime shortcut.
> http://tools.search.yahoo.com/shortcuts/#news
>

85. New file uploaded to 24GHzHam

Yahoo group: 24GHzHam
Date: 2007-05-20 15:06:33 UTC
From: 24GHzHam@yahoogroups.com
Topic: 31 Message: 85

```
Hello,

This email message is a notification to let you know that
a file has been uploaded to the Files area of the 24GHzHam
group.

File : /verticom_freqs.XLS
Uploaded by : ww2r_dave <ww2r@...>
Description : Frequencies available from Verticom Oscillator

You can access this file at the URL:
http://groups.yahoo.com/group/24GHzHam/files/verticom_freqs.XLS

To learn more about file sharing for your group, please visit:
http://help.yahoo.com/help/us/groups/files

Regards,

ww2r_dave <ww2r@...>
```

86. New file uploaded to 24GHzHam

Yahoo group: 24GHzHam
Date: 2007-05-22 18:29:19 UTC
From: 24GHzHam@yahoogroups.com
Topic: 31 Message: 86

Hello,

This email message is a notification to let you know that
a file has been uploaded to the Files area of the 24GHzHam
group.

File : /mts1500_CA.pdf
Uploaded by : ww2r_dave <ww2r@...>
Description : Updated document with frequency stability plots

You can access this file at the URL:
http://groups.yahoo.com/group/24GHzHam/files/mts1500_CA.pdf

To learn more about file sharing for your group, please visit:
http://help.yahoo.com/help/us/groups/files

Regards,

ww2r_dave <ww2r@...>

87. Verticom Synthesizer OCXO reference datasheet posted

Yahoo group: 24GHzHam
Date: 2007-05-23 03:29:58 UTC
From: Frank Kelly
Topic: 87 Message: 87

I found and posted a file having the manufacturer's datasheet for the ovenized 62.5MHz reference oscillator used in the 11GHz Verticom Synthesizers. The datasheet shows pin one of the OCXO is an electronic tuning pin that permits trimming the oscillator to frequency.

I've opened up a synthesizer and see the oscillator pins. The trim pins appears to be unused. It may be possible to wire the unused trim pin to an unused pin on the power connector. I am investigating.

Frank

88. Re: Verticom Synthesizer OCXO reference datasheet posted

Yahoo group: 24GHzHam
Date: 2007-05-23 13:03:38 UTC
From: ww2r@g4fre.com
Topic: 87 Message: 88

interesting...i have had problems in the past with leaving tune pins floating and there affects on frequency, it should either have a voltage or be grounded so it doesnt get noise on it. When i get a moment I will investigate, but as sister in law arrives from england next thursday i have some painting to do in her bedroom!!

Dave

Frank Kelly writes:

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> Frank

89. Re: Verticom Synthesizer OCXO reference datasheet posted

Yahoo group: 24GHzHam
Date: 2007-05-31 16:37:13 UTC
From: ww2r_dave
Topic: 87 Message: 89

Last night i applied 12V to the 8V reference pin of the verticom; it produced smoke and it stopped working

so I took the cover off (lots of screws) and found there was a 10V rated tantalum on the 8V line which was short circuit. So I replaced it with a 25V rated one and everything works fine

while i had the unit in bits i looked under the board with the oscillator on it (not for the faint hearted!). The oscillator tune pin is very firmly grounded and would need some PCB scalpel work to tune it with a voltage

Dave

--- In 24GHzHam@yahoogroups.com, "Frank Kelly" <fm.kelly@...> wrote:
>
> I found and posted a file having the manufacturer's datasheet for the ovenized 62.5MHz reference oscillator used in the 11GHz Verticom Synthesizers. The datasheet shows pin one of the OCXO is an electronic tuning pin that permits trimming the oscillator to frequency.
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>
> Frank
>

90. Pictures of SDH in progress

Yahoo group: 24GHzHam
Date: 2007-06-14 03:18:14 UTC
From: rabremer
Topic: 90 Message: 90

Hello to the group.

This can be the first message for the month of June.
I have down loaded some pictures of my Breadboard version of my 24 Ghz SDH transceiver.
It consists so far of a SDH unit, Verticom MTS 1500 Oscillator running at 11880 Mhz.
Using a WW2R PIC controller, and a wave-guide WR42 relay fabricated by one of our talented SBMS machinists Dick K6HIJ.
More to follow.

73
Dick
WB6DNX

91. Re: Pictures of SDH in progress

Yahoo group: 24GHzHam
Date: 2007-06-14 15:06:21 UTC
From: Zack Widup
Topic: 90 Message: 91

Nice setup! Did you make/modify the WG sections with the H-plane bends that go to the WG switch?

Do you have any details of the WG switch design? Is this something that it wouldn't be extremely difficult to make or extremely expensive to have someone else machine?

I just picked up a 10 GHz (WR-90) WG switch on eBay for $35 (mfr. Bogart Electronics). I couldn't believe no one else bid on it! It appears to work great.

73, Zack W9SZ

--- In 24GHzHam@yahoogroups.com, "rabremer" <rabremer@...> wrote:
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by
> one of our talented SBMS machinists Dick K6HIJ.
> More to follow.
>
> 73
> Dick
> WB6DNX
>

92. work in progress

Yahoo group: 24GHzHam
Date: 2007-06-16 01:38:16 UTC
From: rabremer
Topic: 92 Message: 92

Hi Zack

The H-Plane bends were custom bent and then the flanges were sanded down to fit the space allotted.
The WR-42 Switch was built by Dick K6HIJ, the basic information may be found at:

http://www.wa1mba.org/wr42sw2.htm

This was found in the RSGB Microwave news letter dated March 2001.
Dick has made several version, and this is one of his latest.
Let me know if I can help you further.
73
Dick
WB6DNX

Re: Pictures of SDH in progress

Nice setup! Did you make/modify the WG sections with the H-plane bends that go to the WG switch?

Do you have any details of the WG switch design? Is this something that it wouldn't be extremely difficult to make or extremely expensive to have someone else machine?

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> one of our talented SBMS machinists Dick K6HIJ.
> More to follow.
>

> 73
> Dick
> WB6DNX
>

93. Welcome new members

Yahoo group: 24GHzHam
Date: 2007-06-29 15:08:26 UTC
From: Frank WB6CWN
Topic: 93 Message: 93

Eight new members have joined the 24GHz group during June. They are:
luis_cupido, kb7dqh, sp9ttg, pe2kxh, munned, drzarkof56, wa6jbd,
cshoaff. Welcome aboard.
Frank WB6CWN

97. Re: [24GHzHam] Welcome new members

Yahoo group: 24GHzHam
Date: 2007-06-29 18:52:16 UTC
From: Eric Smith
Topic: 93 Message: 97

Thanks for the "welcome aboard"... Looks like this weekend
I should be able to get the
board wired/tested/tuned to a point of "pre-packaging"...
along with seeing if a Frequency West brick I picked up at
MUD 2005 will sing the right note to get the rig on a
useable frequency, then, see if I can dig up a crystal for
it.

Gots to fab some waveguide chunks to hook it up to the
antenna I have been provided with,
a one foot dish with its own orthomode transducer. Plot
is to see if there is sufficient isolation (better than
30dB, according to Nurad...) to allow receiving on one port
and transmitting on the other, thus no switch required...
Orient the dish to provide 45 degree slants rather than
vertical/horizontal polarization...

Eric
KB7DQH

98. CTI 11,5 GHz DRO Oscillator from SDH transceiver

Yahoo group: 24GHzHam
Date: 2007-06-29 19:33:45 UTC
From: Wolfgang Hoeth
Topic: 98 Message: 98

dear all,

has anybody a plot available which shows frequency drift versus warm up time ? how long does it takes to begin SSB operation after power on ? any expierences available for 76 GHz operations ?

thank`s in advance and 73
Wolfgang
OE3WOG

99. Progress with SDH

Yahoo group: 24GHzHam
Date: 2007-06-29 23:54:56 UTC
From: rabremer
Topic: 99 Message: 99

Hi gang
Here is the WB6DNX 24 Ghz project update!

OK take a look at the new PIX.

The testing so far has been so-so.

I checked the Local Osc. in the FT 817 and set it to 67.875 Mhz using
a beat method, a receiver tune to
67.875 and beating a R&S signal generator and adjusting the cap on
the Osc. That part seems to be good.

Next I put probe next to the connector on the Verticom and could hear
a weak signal at 26.250 Mhz.
I beat it with the R&S generator and got about 15 hz low. I think I
may need to check it again.

Ok the question is: when I feed a 24192 signal in it comes out of the
ft817 about 20 to 25 Khz high.
I used two different signal sources, one was My Qualcomm 1152 board
and the other was a good generator signal from N6EX ' s lab.

Do you think this a normal deviation??

Next test was power out put N6AX measured it to be + 5 Dbm at the
wave guide switch test port.
The input level to the IF input was set to + 5 Dbm at 432 Mhz.
I think the book calls for +10 Dbm right???

Next dumb question does the wave guide filter port marked INPUT (the
end that has the isolator)
connect to the port marked FILT IN ?????

To recap rx a little high in freq. I can live with that.
Tx low in power out put.

Any comments welcome.

73
Dick
WB6DNX

100. Re: [24GHzHam] CTI 11,5 GHz DRO Oscillator from SDH transceiver

Yahoo group: 24GHzHam
Date: 2007-06-30 04:09:23 UTC
From: Zack Widup
Topic: 98 Message: 100

All my microwave LO's through 10 GHz use either the KD6OZH low-noise PLL circuit or a variation of it (e.g. VE1ALQ). I have three Isotemp 10 MHz OCXO's that take about 15 minutes to stabilize from a cold start well enough to be within a kHz at 10 GHz. This circuit has been a superb performer in terms of accuracy and stability up to 10 GHz. I haven't tried it yet on 24 GHz.

I do have my eye on 47 and 76 GHz but I'll probably have to make two of everything and loan a rig out to someone to work, as I don't know anyone in my area active on those bands. I might try the same low-noise PLL circuit on those bands. WA1ZMS thinks it will do OK.

I just haven't figured out what frequency to use on 76 GHz. The calling frequency for 47 GHz seems to be 47088 MHz. I saw some references on a webpage that indicated 76032 MHz for that band but it apparently isn't agreed upon a whole lot.

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> time ? how long does it takes to begin SSB operation after power on ?
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>
> thank`s in advance and 73
> Wolfgang
> OE3WOG
>

101. Re: [24GHzHam] Progress with SDH

Yahoo group: 24GHzHam
Date: 2007-06-30 22:23:55 UTC
From: Frank Kelly
Topic: 99 Message: 101

Hi Dick,
The Verticom uses a 52.500MHz internal reference. You might be able to detect it externally.
Given the untrimmable nature of the Verticom's reference, it could be that far off at 24GHz. There is a trim pin on the reference oscillator, but its tricky to get to.
The TX IF input level per the Endwave datasheet is +10dBm.
The Endwave LO input is specified as +14 to +19, but I am told that's into a 6dB SMA attenuator shipped with the unit. Subtracting the 6dB leaves +8 to +13dBm. The DRO designed for the unit does +15 into the 6dB pad (leaving +9dBm in) and the Verticoms are rated for +12 so you'll want to check your LO input attenuator to see there is enough drive.
Your rig looks good on the tripod. Keep at it!
Frank

rabremer wrote:

> Hi gang
> Here is the WB6DNX 24 Ghz project update!
>
> OK take a look at the new PIX.
>
> The testing so far has been so-so.
>
> I checked the Local Osc. in the FT 817 and set it to 67.875 Mhz using
> a beat method, a receiver tune to
> 67.875 and beating a R&S signal generator and adjusting the cap on
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> a weak signal at 26.250 Mhz.
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> Ok the question is: when I feed a 24192 signal in it comes out of the
> ft817 about 20 to 25 Khz high.
> I used two different signal sources, one was My Qualcomm 1152 board
> and the other was a good generator signal from N6EX ' s lab.
>
> Do you think this a normal deviation??
>
> Next test was power out put N6AX measured it to be + 5 Dbm at the
> wave guide switch test port.
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>
> Next dumb question does the wave guide filter port marked INPUT (the
> end that has the isolator)
> connect to the port marked FILT IN ?????
>
> To recap rx a little high in freq. I can live with that.
> Tx low in power out put.
>
> Any comments welcome.
>
> 73
> Dick
> WB6DNX
>
>

102. Broke SDH

Yahoo group: 24GHzHam
Date: 2007-07-01 05:53:33 UTC
From: w7glf
Topic: 102 Message: 102

KB7DQH and I have been doing some testing with my unit and his unit. It looks either the TX mixer or the device (amp?) immediately after it is not working properly. Having the two units we see that the power coming from the attenuator agrees but power at the FILT IN is 30 dB down on the second unit.

It would help if we could take the cover off. My question is can the cover be taken off without removing the verboten screws? We tried removing the other screws but the waveguide over plate seemed like is was being held by those "do not remove" screws. Several people have posted pictures of what is under the covers - did they sacrifice a unit to do that or it is simply sticky gaskets and the cover needs to be pried off?

We need to see if it is the mixer or the following device where our huge power loss is occurring.

Assuming the circuit cover bearing the waveguide flanges over the TX/RX mixers can be removed
without damaging the board below, it may be possible to "breathe some life" into this unit by feeding the mixer output directly to the waveguide probe at the "FILT IN" port, assuming the gain block is toast... or at least be able to probe the mixer output and see what the level there is...

Just don't think -20dBm is enough output to do a whole lot at 24 Ghz...

103. Power out measurements

Yahoo group: 24GHzHam
Date: 2007-07-01 23:57:42 UTC
From: w7glf
Topic: 103 Message: 103

At least my unit seems to be putting some power out. So far I have been able to get about 300 mW with the supplied filter. The filter seems to account for some of this. Even with careful tuning I am getting about 5 dB loss through the filter. I started from the published post positions as well as I could measure and tweaked from there. DQH had a neat idea and we used my Dremmel tool to notch a screw driver blade to make a 4 mm wrench for the lock nuts on the filter - works great! I have also tried PyroJoe's filter through some flex WR 42 and seem to get a little more out - about 360 mW. I suspect the flex WR 42 has measurable loss too.

The results of our experiments seem to indicate that the power amp is not compressing but rather it is the amp before the filter. Also the PA stage seems to be almost exactly 30 dB gain. I expect the transverter is built to purposely lightly load the final amps as the units were meant for 24x7 continuous full duplex service.

We verified DQH's power amp by connecting my FILT OUT to his FILT IN. We got about 400 mW out of his PA so we know his problem is between the mixer and the FILT OUT port.

We still hope to hear if it is possible to get the cover off on the FILT OUT side so we can see where the problem is and what our options are.

104. Re: Progress with SDH

Yahoo group: 24GHzHam
Date: 2007-07-02 00:07:51 UTC
From: w7glf
Topic: 99 Message: 104

Gosh - no such thing as a "dumb" question. Yes the filter in goes to
the FILT IN. We tried reversing here as a test and watched the power
go down.

--- In 24GHzHam@yahoogroups.com, Frank Kelly <fm.kelly@...> wrote:
>
> Hi Dick,
> The Verticom uses a 52.500MHz internal reference. You might be able to
> detect it externally.
> Given the untrimmable nature of the Verticom's reference, it could be
> that far off at 24GHz. There is a trim pin on the reference
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> but its tricky to get to.
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> The Endwave LO input is specified as +14 to +19, but I am told that's
> into a 6dB SMA attenuator shipped with the unit. Subtracting the 6dB
> leaves +8 to +13dBm. The DRO designed for the unit does +15 into the
> 6dB pad (leaving +9dBm in) and the Verticoms are rated for +12 so
you'll
> want to check your LO input attenuator to see there is enough drive.
> Your rig looks good on the tripod. Keep at it!
> Frank
>
> rabremer wrote:
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> > Here is the WB6DNX 24 Ghz project update!
> >
> > OK take a look at the new PIX.
> >
> > The testing so far has been so-so.
> >
> > I checked the Local Osc. in the FT 817 and set it to 67.875 Mhz using
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> > 67.875 and beating a R&S signal generator and adjusting the cap on
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> > Next I put probe next to the connector on the Verticom and could hear
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> > I used two different signal sources, one was My Qualcomm 1152 board

> > and the other was a good generator signal from N6EX ' s lab.
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> >
> > Any comments welcome.
> >
> > 73
> > Dick
> > WB6DNX
> >
> >
>

105. Re: [24GHzHam] Re: Progress with SDH

Yahoo group: 24GHzHam
Date: 2007-07-02 01:28:36 UTC
From: Eric Smith
Topic: 99 Message: 105

Its a good thing I collect and save just about
"everything"... On a pile of electronics wired together
was a neat little goodie that appears to be some sort of
powered mixer device. The scribbling on the device in
pencil, fading, shows +13dBm out, with 10368 LO and 3456
IF.... WR 42 port on output. +5V and +12V power
connections. SMA's everywhere else.....
Assuming this thing works; (testing to follow:-) It, along
with some sort of LO power divider should get my "dead" SDH
radio up and running at more than full output (see above)
using one of the filters available from Pyrojoe, as this
would facilitate the installation of this device to use as
a substitute TX "exciter"...

Eric
KB7DQH
>

106. Re: CTI 11,5 GHz DRO Oscillator from SDH transceiver

Yahoo group: 24GHzHam
Date: 2007-07-02 01:52:29 UTC
From: ww2r_dave
Topic: 98 Message: 106

Take a look at page 3 of mts1500_CA.pdf in the files area

This shows measurements on 4 units

There is a lot of variation between units. Only one settled down within 5khz of the expected frequency

Dave

ww2r

--- In 24GHzHam@yahoogroups.com, "Wolfgang Hoeth" <wolfgang.hoeth@...> wrote:
>
> dear all,
>
> has anybody a plot available which shows frequency drift versus warm up
> time ? how long does it takes to begin SSB operation after power on ?
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> thank`s in advance and 73
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107. Re: [24GHzHam] Re: CTI 11,5 GHz DRO Oscillator from SDH transceiver

Yahoo group: 24GHzHam
Date: 2007-07-02 04:21:41 UTC
From: Frank Kelly
Topic: 98 Message: 107

Wolfgang,

Which CTI DRO do you have? The 12.5755GHz DRO that was intended for use with the Endwave transverter has its own 100MHz range internal reference oscillator. I don't know if anyone has made frequency accuracy/stability measurements of it. Bear in mind that it will provide high side injection and a 959MHz IF frequency. Tony KC6QHP uses this original DRO in his scheme with a second high side conversion down to 2M. There is a block diagram and a picture of his radio on the website.

There are also some CTI DRO's around that use an external reference, in which case the accuracy and stability is as good as the reference.

Finally, WW2R's mts1500_CA.pdf file he referenced represents measurements he made of 11.88GHz Verticom synthesizers using their internal reference.

Frank WB6CWN

ww2r_dave wrote:

> Take a look at page 3 of mts1500_CA.pdf in the files area
>
> This shows measurements on 4 units
>
> There is a lot of variation between units. Only one settled down within
> 5khz of the expected frequency
>
> Dave
>
> ww2r
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> --- In 24GHzHam@yahoogroups.com <mailto:24GHzHam%40yahoogroups.com>,
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> >
>
>

108. AW: [24GHzHam] CTI 11,5 GHz DRO Oscillator from SDH transceiver

Yahoo group: 24GHzHam
Date: 2007-07-04 21:49:57 UTC
From: wolfgang.hoeth@aon.at
Topic: 98 Message: 108

Thank`s for inputs,

the DRO i mean, is the Herley-CTI DRO 12.575,5 MHz Oscillator (with internal reference) it is the same unit as shown on the photo corner. Bought some units from a dutch surplus dealer on the fleamarket in Friedrichshafen. The same dealer sales the endwave SDH transceiver. The CTI specs sheet says +/- 2,5ppm or in other words +/- 30Khz frequency stability on 12 GHz (over operating temperatur -40C° to +75C° ??). For reference, this CTI- DRO does have have an xtal inside in the range of appr.100 MHz, so the DRO locks i.e. on the 120X harmonics of the reference fundamental. The big question is about the short term stability ? any hints ? Aplying 12 Volt DC power to the unit shows a high current (heating up ?) which drops to 320mA after view minutes. The unit it self gets very hot if longer in operation, (heatsink required ?)

Is someone working with these unit as a LO drive for 24 GHz or for higher bands and has some info`s available? plan to change the internal reference of the CTI device to generate other frequencies, and/or to modify the unit for the use of external reference, i.e. G8ACE OCXO or GPS disciplined frequency sources ?

The 76.032 GHz amateur band is secundary allocated in Europe, dependig on IARU1 recommendations we should move to 75,5 GHz which has primary status but nobody start to move. Here in OE land we are only 3 hams which have gone that far. I believe in the US you are on 78 GHz.

On 24 GHz, Europe is now on 24.048,000 MHz instead of former 24.192,000 MHz, (we got more more pressure to change the band)

73, Wolfgang OE3WOG

-----Ursprüngliche Nachricht-----
Von: 24GHzHam@yahoogroups.com [mailto:24GHzHam@yahoogroups.com] Im Auftrag von Zack Widup
Gesendet: Samstag, 30. Juni 2007 06:09
An: 24GHzHam@yahoogroups.com
Betreff: Re: [24GHzHam] CTI 11,5 GHz DRO Oscillator from SDH transceiver

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> thank`s in advance and 73
> Wolfgang
> OE3WOG
>

109. First narrow band 24 Ghz contact

Yahoo group: 24GHzHam
Date: 2007-07-09 04:00:05 UTC
From: rabremer
Topic: 109 Message: 109

Hello to the group
To day at 1415 Hrs, John N6AX and my self WB6DNX make my first narrow band contact
on 24 Ghz using the SDH boards. The signals were very strong in both directions.
We chose two locations that we could not miss if the radios were working. John was at DM13BV in a park at State College and Bastanchury Rd. in Fullerton and I was at the Brea High school parking lot in the Brea Hills
DM13BW. The total distance was 2.466 miles (per the FCC calculator).
The first two way was done on FM and then we switched to SSB.
The next test was to use the wave guide switch "Test" port WR-42 elbow open wave guide, still the signals were 10 Db over 9.
I want to thank all those who helped me make this possible.

73
Dick

110. Re: [24GHzHam] First narrow band 24 Ghz contact

Yahoo group: 24GHzHam
Date: 2007-07-09 04:05:49 UTC
From: Miguel Ramirez
Topic: 109 Message: 110

Congrats! Dick...outstanding effort....atta boy!@ de ylz

rabremer <rabremer@...> wrote: Hello to the group
To day at 1415 Hrs, John N6AX and my self WB6DNX make my first narrow band contact
on 24 Ghz using the SDH boards. The signals were very strong in both directions.
We chose two locations that we could not miss if the radios were working. John was at DM13BV in a park at State College and Bastanchury Rd. in Fullerton and I was at the Brea High school parking lot in the Brea Hills
DM13BW. The total distance was 2.466 miles (per the FCC calculator).
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73
Dick

111. Re: [24GHzHam] First narrow band 24 Ghz contact

Yahoo group: 24GHzHam
Date: 2007-07-09 04:13:13 UTC
From: Eric Smith
Topic: 109 Message: 111

Cool! What were you all running for antennas, before one
of you switched to a bare waveguide???
Eric
KB7DQH

On Mon, 09 Jul 2007 04:00:05 -0000
"rabremer" <rabremer@...> wrote:
> Hello to the group
> To day at 1415 Hrs, John N6AX and my self WB6DNX make my
> first narrow
> band contact
> on 24 Ghz using the SDH boards. The signals were very
> strong in both
> directions.
> We chose two locations that we could not miss if the
> radios were
> working. John was at DM13BV in a park at State College
> and Bastanchury
> Rd. in Fullerton and I was at the Brea High school
> parking lot in the
> Brea Hills
> DM13BW. The total distance was 2.466 miles (per the FCC
> calculator).
> The first two way was done on FM and then we switched to
> SSB.
> The next test was to use the wave guide switch "Test"
> port WR-42 elbow
> open wave guide, still the signals were 10 Db over 9.
> I want to thank all those who helped me make this
> possible.
>
> 73
> Dick
>

112. Re: [24GHzHam] First narrow band 24 Ghz contact

Yahoo group: 24GHzHam
Date: 2007-07-09 04:25:08 UTC
From: rabremer@juno.com
Topic: 109 Message: 112
Attachments: 2 described; binary payloads are missing from this source WARC

```
[ Attachment content not displayed ]
```

113. Re: [24GHzHam] First narrow band 24 Ghz contact

Yahoo group: 24GHzHam
Date: 2007-07-09 04:37:54 UTC
From: Zack Widup
Topic: 109 Message: 113

Wow, cool! Are you going to try for more distance?

If the signals were 10 over 9 at that distance, it seems you should be able to have QSO's at much greater distances.

What were you using for LO's? How stable and accurate did they seem to be?

73, Zack W9SZ

On Mon, 9 Jul 2007, rabremer wrote:

> Hello to the group
> To day at 1415 Hrs, John N6AX and my self WB6DNX make my first narrow
> band contact
> on 24 Ghz using the SDH boards. The signals were very strong in both
> directions.
> We chose two locations that we could not miss if the radios were
> working. John was at DM13BV in a park at State College and Bastanchury
> Rd. in Fullerton and I was at the Brea High school parking lot in the
> Brea Hills
> DM13BW. The total distance was 2.466 miles (per the FCC calculator).
> The first two way was done on FM and then we switched to SSB.
> The next test was to use the wave guide switch "Test" port WR-42 elbow
> open wave guide, still the signals were 10 Db over 9.
> I want to thank all those who helped me make this possible.
>
> 73
> Dick
>

114. Re: [24GHzHam] First narrow band 24 Ghz contact

Yahoo group: 24GHzHam
Date: 2007-07-09 05:53:51 UTC
From: rabremer@juno.com
Topic: 109 Message: 114
Attachments: 2 described; binary payloads are missing from this source WARC

```
[ Attachment content not displayed ]
```

115. use of original antenna ?

Yahoo group: 24GHzHam
Date: 2007-07-09 09:01:06 UTC
From: pe2kxh
Topic: 115 Message: 115

hello !

A great source info on these pcb's is created here !

2 questions.....

Did anyone try to use the original antenna and white dish what is sold also in europe for using on 24 ghz?
A transition from wg42 to the feed is the problem for me.

Is it possible to modify the DRO as LO or is it necesary to use an external LO ?
At this moment I use a transverter (200mW , 3 dB NF IF = 432 MHz RF = 24048 MHz) with parts from DMC , also a DRO locked LO circuit.
Stability is ok for SSB with thast one.

I hope somebody can help me .....

73 jac pe1kxh

116. Re: [24GHzHam] use of original antenna ?

Yahoo group: 24GHzHam
Date: 2007-07-09 12:09:54 UTC
From: Zack Widup
Topic: 115 Message: 116

I have an Endwave 1 foot dish I plan on using on that band. I bought it from another ham, and it came with a circular-to-WR42 transition and a WR42-to-SMA transition. I think he supplied at least the WR42-to-SMA.

I'm not sure where the circular-to-WR42 transition came from. It LOOKS lile it was part of the original dish package.

73, Zack W9SZ

On Mon, 9 Jul 2007, pe2kxh wrote:

> hello !
>
> A great source info on these pcb's is created here !
>
> 2 questions.....
>
> Did anyone try to use the original antenna and white dish what is sold
> also in europe for using on 24 ghz?
> A transition from wg42 to the feed is the problem for me.
>
> Is it possible to modify the DRO as LO or is it necesary to use an
> external LO ?
> At this moment I use a transverter (200mW , 3 dB NF IF = 432 MHz RF =
> 24048 MHz) with parts from DMC , also a DRO locked LO circuit.
> Stability is ok for SSB with thast one.
>
> I hope somebody can help me .....
>
> 73 jac pe1kxh
>
>
>
>
> Yahoo! Groups Links
>
>
>
>

117. Re: use of original antenna ?

Yahoo group: 24GHzHam
Date: 2007-07-09 20:30:25 UTC
From: Frank WB6CWN
Topic: 115 Message: 117

Hello Jac,

Yes you can use the original CTI DRO, but you will have to use a second IF to get it into the 70cm ham band. There is an example of this idea from KC6QHP in the files section of this website. See his file 24gigradio.GIF

You can also change the frequency of the DRO crystal or remove it and drive it externally with another oscillator to move the DRO a little bit. You may be able to move it enough to use a 1296MHz IF, but I have not tried this. Even so, you will have high side injection.

I have been able to tune the external reference (no crystal) version of the CTI DRO from 11.5GHz to 12.0 GHz with good results.

Good luck and see you on the air,

Frank WB6CWN

--- In 24GHzHam@yahoogroups.com, "pe2kxh" <jemsmeets@...> wrote:
>
> hello !
>
> A great source info on these pcb's is created here !
>
> 2 questions.....
>
> Did anyone try to use the original antenna and white dish what is
sold
> also in europe for using on 24 ghz?
> A transition from wg42 to the feed is the problem for me.
>
> Is it possible to modify the DRO as LO or is it necesary to use an
> external LO ?
> At this moment I use a transverter (200mW , 3 dB NF IF = 432 MHz
RF =
> 24048 MHz) with parts from DMC , also a DRO locked LO circuit.
> Stability is ok for SSB with thast one.
>
> I hope somebody can help me .....
>
> 73 jac pe1kxh
>

118. Re: use of original antenna ?

Yahoo group: 24GHzHam
Date: 2007-07-12 06:38:41 UTC
From: w7glf
Topic: 115 Message: 118

Another choice is to build your own transitions. Even without WR42 hobby shops here carry 3/8 by 3/16 (~WR38) rectangular brass sections that work fine on 24 GHz. There are two hams (W7LHL and KD7TS) in my area who homebrewed their own waveguide, flanges, dish feeds and transitions using this hobby brass for the waveguide. A trick they taught me is to take a chunk of aluminum and file it into a block (sliding short) that just fits and slides inside the hobby brass. Solder a high quality SMA connector to the hobby brass and adjust for max smoke with the sliding short - it really works. Some more info on the KD7TS webpage at http://members.aceweb.com/his callsign here/.

--- In 24GHzHam@yahoogroups.com, "pe2kxh" <jemsmeets@...> wrote:
>
> hello !
>
> A great source info on these pcb's is created here !
>
> 2 questions.....
>
> Did anyone try to use the original antenna and white dish what is sold
> also in europe for using on 24 ghz?
> A transition from wg42 to the feed is the problem for me.
>
> Is it possible to modify the DRO as LO or is it necesary to use an
> external LO ?
> At this moment I use a transverter (200mW , 3 dB NF IF = 432 MHz RF =
> 24048 MHz) with parts from DMC , also a DRO locked LO circuit.
> Stability is ok for SSB with thast one.
>
> I hope somebody can help me .....
>
> 73 jac pe1kxh
>

119. Re: [24GHzHam] Re: use of original antenna ?

Yahoo group: 24GHzHam
Date: 2007-07-13 06:26:19 UTC
From: Ray Cannon
Topic: 115 Message: 119

I believe maximizing return loss is a better indication of match than forward power if you have a way to measure return loss (e.g. directional coupler). I bought one on EBay that was marked 12 to 18 GHz but it seems to work on 24 GHz.
w7glf <w7glf@...> wrote: Another choice is to build your own transitions. Even without WR42 hobby shops here carry 3/8 by 3/16 (~WR38) rectangular brass sections that work fine on 24 GHz. There are two hams (W7LHL and KD7TS) in my area who homebrewed their own waveguide, flanges, dish feeds and transitions using this hobby brass for the waveguide. A trick they taught me is to take a chunk of aluminum and file it into a block (sliding short) that just fits and slides inside the hobby brass. Solder a high quality SMA connector to the hobby brass and adjust for max smoke with the sliding short - it really works. Some more info on the KD7TS webpage at http://members.aceweb.com/his callsign here/.

--- In 24GHzHam@yahoogroups.com, "pe2kxh" <jemsmeets@...> wrote:
>
> hello !
>
> A great source info on these pcb's is created here !
>
> 2 questions.....
>
> Did anyone try to use the original antenna and white dish what is sold
> also in europe for using on 24 ghz?
> A transition from wg42 to the feed is the problem for me.
>
> Is it possible to modify the DRO as LO or is it necesary to use an
> external LO ?
> At this moment I use a transverter (200mW , 3 dB NF IF = 432 MHz RF =
> 24048 MHz) with parts from DMC , also a DRO locked LO circuit.
> Stability is ok for SSB with thast one.
>
> I hope somebody can help me .....
>
> 73 jac pe1kxh
>

Now that's room service! Choose from over 150,000 hotels
in 45,000 destinations on Yahoo! Travel to find your fit.

120. Getting close

Yahoo group: 24GHzHam
Date: 2007-07-15 08:05:09 UTC
From: w7glf
Topic: 120 Message: 120

I know I am slow but am close to getting packaging done - a week or two. One question is how much heat sink are others using? I have noted that darn voltage regulator makes the pallet quite hot if the Tx is keyed for a couple of minutes even when I feed it with 7.2 volts. Perhaps I will need a fan.

121. Power/Interface Connector

Yahoo group: 24GHzHam
Date: 2007-07-23 16:10:41 UTC
From: bartram_chris
Topic: 121 Message: 121

Hello from wet west Wales!

This is my first post to the Group. I've just started modifying one of the Endwave SDH units (it looks as though it may be one of the hub units BTW) for 24GHz.

Does anyone have information on the power/interface connector pin allocations for the unit so that I can check my deductions?

For people in the UK, I may have a source of these units (no financial involment on my part...) using a 12.6735GHz LO and a split of about +310MHz on RX and -1160MHz on TX. If anyone is interested, please contact me off-line.

Vy 73

Chris
GW4DGU

122. Power connections

Yahoo group: 24GHzHam
Date: 2007-07-24 05:32:19 UTC
From: w7glf
Topic: 122 Message: 122

I don't know how to tell the hub from the CPE except from the current draw. The power cable pinout for the unit I have (I think it is the HUB - it draws a little over 4 amps on the 7.35V) with the RF IN and RF OUT waveguides facing you (power connector in the back) is:

Left to right

1 Ground
2 skipped
3 +12V (yellow wire)
4,5 skipped
6 +7.35V (Red wire)
7 skipped
8 +7.35V (Red wire)
9 skipped
10 Ground
11 skipped
12 -6V (Blue wire)
13 skipped
14 Ground
15 skipped
16 Ground
17 skipped

123. Power Connections

Yahoo group: 24GHzHam
Date: 2007-07-24 09:33:45 UTC
From: Chris Bartram
Topic: 123 Message: 123

On Tuesday 24 July 2007 06:32, w7glf wrote:
> I don't know how to tell the hub from the CPE except from the current
> draw. The power cable pinout for the unit I have (I think it is the
> HUB - it draws a little over 4 amps on the 7.35V) with the RF IN and
> RF OUT waveguides facing you (power connector in the back) is:
>
> Left to right
>
> 1 Ground
> 2 skipped
> 3 +12V (yellow wire)
> 4,5 skipped
> 6 +7.35V (Red wire)
> 7 skipped
> 8 +7.35V (Red wire)
> 9 skipped
> 10 Ground
> 11 skipped
> 12 -6V (Blue wire)
> 13 skipped
> 14 Ground
> 15 skipped
> 16 Ground
> 17 skipped

Thanks very much for that: it almost agrees with what I'd deduced, and with
a friend who phoned me. However, my unit has some extra wires...

Using the same ordering as W7GLF:

```
1       Ground   (black)
2       ?             (yellow stripe on white ground)
3       +12V        (yellow)
4       ?              (green)
5       +7.35V   (red)
6       +7.35V   (red)
7       +7.35V   (red)
8       +7.35V   (red)
9       ?             (orange)
10      Ground   (black)
11      ?              (orange stripe on white ground)
12      (-6V)        (blue)
13      ?             (red stripe on white ground)
14      Ground   (black)
15      nc
16      Ground   (black)
```

17 nc

My unit has an Endwave part number S9828052. A label on the case records a -1dB compression point of +28.51dB (presumably dBm) which, given that there is a four pole filter on the output, seems to indicate a -1dB point of around 1W (and probably quite a lot more at saturation!)

I'd appreciate any observations or assistance.

Vy 73

Chris
GW4DGU

124. Power connections

Yahoo group: 24GHzHam
Date: 2007-07-26 08:10:38 UTC
From: w7glf
Topic: 122 Message: 124

The extra wires are interesting. I note the data sheet talks about transmit mute capability, power detect, ALC and power control (which might be referring to the dip switches although I would not think so). I suspected these were on the skipped pins of my power connector. Given that power detect sounds like an output - that is probably one of the mystery wires. ALC in or out hmmm - probably an output to the IF radio? The mute might obviate the PFET hack. I am too timid to actually try grounding mystery pins and the cable I have does not even have wires or pins in those positions.

The extra red wires make sense - just two seemed kind of wimpy for handling 5 amps. I supposed they are enough as short as they are but more is better.

If you figure out what those striped wires do let me know. The power detect should be easy to figure out - I think I will do some testing when I finish packaging mine. It would be just too cool to meter that line on the front panel.

That gives me an idea - I will ask my friend KB7DQH who has a unit that only puts out -20 dBm - (after the PA) to carefully inspect his connector for a potential short on his boards' connector. It is unlikely but it is certainly worth a look to see if that solves his power output problem. I know it was not a miswired connection problem because I actually was mailed his unit and tested it with the same power cable and supplies that worked fine on my unit.

125. Power connections Part 2

Yahoo group: 24GHzHam
Date: 2007-07-26 08:25:33 UTC
From: w7glf
Topic: 125 Message: 125

I note that my unit and KB7DQH's unit have a different part number - both are S9828051. Not sure what that means... Perhaps ours do not have the extra functionality mentioned in the datasheet which is why we do not have the extra wires.

126. Power/control connections

Yahoo group: 24GHzHam
Date: 2007-07-29 17:17:37 UTC
From: Chris Bartram
Topic: 125 Message: 126

On Thursday 26 July 2007 09:25, w7glf wrote:

> I note that my unit and KB7DQH's unit have a different part number -
> both are S9828051. Not sure what that means... Perhaps ours do not
> have the extra functionality mentioned in the datasheet which is why
> we do not have the extra wires.

The Nortel CPC:A0792365 ODU from which I've recovered my converter has a board to which the striped wires run. This board has a modem and DAC, so I assume that this allows control of the up/down converter, although I've not yet had a chance to look in detail.

I guess that this unit was probably made/designed at Nortel in Calgary. I don't suppose that there's anyone here who knows anyone in VE6 who might have access to any information?!!

Incidentally, as my ODU has a 48V power supply, I intend to make a simple 12 to 48V converter for portable operation.

Vy 73

Chris
GW4DGU

127. Re:Power/control connections

Yahoo group: 24GHzHam
Date: 2007-07-29 17:28:06 UTC
From: Chris Bartram
Topic: 125 Message: 127

Apologies. I got the Nortel Model number wrong. It should be BTR26-01M. The part number is NTVG17BA.

Vy 73

Chris
GW4DGU

128. Power Connections - a little more information

Yahoo group: 24GHzHam
Date: 2007-07-31 23:21:58 UTC
From: Chris Bartram
Topic: 128 Message: 128

I had a chance this evening to take a quick look at the circuitry associated with the 'striped' wires on my unit.

Although I didn't get time to work through the complete schematic(!!) all of the striped wires initially appear to be outputs of some sort of sensing circuitry associated with the LM2902 quad op-amps.

I'll look further as and when I get time.

Vy 73

Chris
GW4DGU

132. Re: Power connections updated!

Yahoo group: 24GHzHam
Date: 2007-08-03 06:44:10 UTC
From: Joseph A. Ruggieri (KI4NPV)
Topic: 122 Message: 132

I have completed some of the blank connector pin functions below.

Joe KI4NPV

1 Ground
2 Transmit section IDD supply current monitor
3 +12V (yellow wire)
4 Final IDD supply current monitor for units using one APH328.
5 +7.35V
6 +7.35V (Red wire)
7 +7.35V
8 +7.35V (Red wire)
9 + 7.35v supply current monitor
10 Ground
11 skipped
12 -6V (Blue wire)
13 power output detector +
14 Ground
15 N.C.
16 Ground
17 N.C.

There are two versions of the board. The version with # 9828051 used
only one output device in the final stage (aph328).
All other part numbers use two EG1157A (TGA1135)amps combined.
The LNA in these units are ALH350-2 which were selected (waffer
probed) to a nortel spec. for <2dB NF.
The driver ahead of the APH328 is a ALH196C. The MMIC amplifiers
after the LNA, after the Tx image reject mixers and to double the LO
frequency are 3 AH216 mmic amplifiers. I stock most of the replacment
MMIC amplifers and other components for these modules in the event
someone has the ability and equipment to replace these devices. I
using two of these modules in my 24GHz rover transverters 432 IF one
of which gets shared for contests. I am also using one module for my
24.2000GHz beacon which has been operating for over 4 months without
a problem and over one watt covering 270 deg. angle located at EL98HR.
One another note, not all of these modules worked when received.
I have done extensive testing on these found that the "datasheet" has
little to do with the actual modules on the surplus market.
That data sheet was a marketing tool showing potential users the
options they could offer.
I have found these persionally to be one of the easiest ways to get
on the 24GHz band.
If anyone has any questions using these modules feel free to ask.

--- In 24GHzHam@yahoogroups.com, "w7glf" <w7glf@...> wrote:
>
> I don't know how to tell the hub from the CPE except from the
current
> draw. The power cable pinout for the unit I have (I think it is the
> HUB - it draws a little over 4 amps on the 7.35V) with the RF IN and
> RF OUT waveguides facing you (power connector in the back) is:
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> 6 +7.35V (Red wire)
> 7 skipped
> 8 +7.35V (Red wire)
> 9 skipped
> 10 Ground
> 11 skipped
> 12 -6V (Blue wire)
> 13 skipped
> 14 Ground
> 15 skipped
> 16 Ground
> 17 skipped
>

133. Power Connections Updated

Yahoo group: 24GHzHam
Date: 2007-08-03 13:14:21 UTC
From: Chris Bartram
Topic: 133 Message: 133

Thankyou Joe!

That saved me some work!

Best wishes

Chris
GW4DGU

134. New file uploaded to 24GHzHam

Yahoo group: 24GHzHam
Date: 2007-08-04 03:28:03 UTC
From: 24GHzHam@yahoogroups.com
Topic: 31 Message: 134

```
Hello,

This email message is a notification to let you know that
a file has been uploaded to the Files area of the 24GHzHam
group.

File : /cti_osc.pdf
Uploaded by : ww2r_dave <ww2r@...>
Description : CTI frequency measurement results

You can access this file at the URL:
http://groups.yahoo.com/group/24GHzHam/files/cti_osc.pdf

To learn more about file sharing for your group, please visit:
http://help.yahoo.com/help/us/groups/files

Regards,

ww2r_dave <ww2r@...>
```

135. Re: CTI 11,5 GHz DRO Oscillator from SDH transceiver

Yahoo group: 24GHzHam
Date: 2007-08-04 03:27:15 UTC
From: ww2r_dave
Topic: 98 Message: 135

At long last I have got round to doing some measurements on the CTI oscillator in my ntvg12bc unit

my cti unit has the cti pn pdro-n-14331 nominally 12.3GHz

I measured it against a rubidium standard over a 24 hour period. It was mounted in the ntvg12bc enclosure with the covers in place (ie no drafts etc)

I will upload a pdf of the results to the files area

Dave

WW2R

In 24GHzHam@yahoogroups.com, <wolfgang.hoeth@...> wrote:
>
>
> the DRO i mean, is the Herley-CTI DRO 12.575,5 MHz Oscillator (with
> internal reference) it is the same unit as shown on the photo corner.
> Bought some units from a dutch surplus dealer on the fleamarket in
> Friedrichshafen. The same dealer sales the endwave SDH transceiver.
The
> CTI specs sheet says +/- 2,5ppm or in other words +/- 30Khz frequency
> stability on 12 GHz (over operating temperatur -40C° to +75C° ??). For
> reference, this CTI- DRO does have have an xtal inside in the range of
> appr.100 MHz, so the DRO locks i.e. on the 120X harmonics of the
> reference fundamental. The big question is about the short term
> stability ? any hints ? t

136. AW: [24GHzHam] Re: CTI 11,5 GHz DRO Oscillator from SDH transceiver

Yahoo group: 24GHzHam
Date: 2007-08-04 18:32:24 UTC
From: wolfgang.hoeth@aon.at
Topic: 98 Message: 136

Dave,
thank you for doing such measurements,
Wolfgang
OE3WOG

-----Ursprüngliche Nachricht-----
Von: 24GHzHam@yahoogroups.com [mailto:24GHzHam@yahoogroups.com] Im Auftrag von ww2r_dave
Gesendet: Samstag, 04. August 2007 05:27
An: 24GHzHam@yahoogroups.com
Betreff: [24GHzHam] Re: CTI 11,5 GHz DRO Oscillator from SDH transceiver

At long last I have got round to doing some measurements on the CTI oscillator in my ntvg12bc unit

my cti unit has the cti pn pdro-n-14331 nominally 12.3GHz

I measured it against a rubidium standard over a 24 hour period. It was mounted in the ntvg12bc enclosure with the covers in place (ie no drafts etc)

I will upload a pdf of the results to the files area

Dave
WW2R

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*

12
New
<http://groups.yahoo.com/group/24GHzHam/members;_ylc=X3oDMTJnZGwzaG1sBF9TAzk3MzU5NzE0BGdycElkAzE5NjIwMDg2BGdycHNwSWQDMTcwNTA2MzEwOARzZWMDdnRsBHNsawN2bWJycwRzdGltZQMxMTg2MTk4MjQz> Members
*

3
New
<http://groups.yahoo.com/group/24GHzHam/spnew;_ylc=X3oDMTJnY2M4a3RxBF9TAzk3MzU5NzE0BGdycElkAzE5NjIwMDg2BGdycHNwSWQDMTcwNTA2MzEwOARzZWMDdnRsBHNsawN2cGhvdARzdGltZQMxMTg2MTk4MjQz> Photos
*

1
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<http://groups.yahoo.com/group/24GHzHam/files;_ylc=X3oDMTJoamZoYzIxBF9TAzk3MzU5NzE0BGdycElkAzE5NjIwMDg2BGdycHNwSWQDMTcwNTA2MzEwOARzZWMDdnRsBHNsa

wN2ZmlsZXMEc3RpbWUDMTE4NjE5ODI0Mw--> Files

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zEEZ3JwSWQDMTk2MjAwODYEZ3Jwc3BJZAMxNzA1MDYzMTA4BHNlYwNzbG1vZARzdGltZQMxM
Tg2MTk4MjQz?t=ms&k=Ham+radio&w1=Ham+radio&w2=Ham+radio+antenna&w3=Ham+ra
dio+store&c=3&s=59&g=2&.sig=3pegO8O4ZW2yIUwj4XxNxQ> radio

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<http://groups.yahoo.com/gads;_ylc=X3oDMTJkZWNrMGRpBF9TAzk3MzU5NzE0BF9wA
zIEZ3JwSWQDMTk2MjAwODYEZ3Jwc3BJZAMxNzA1MDYzMTA4BHNlYwNzbG1vZARzdGltZQMxM
Tg2MTk4MjQz?t=ms&k=Ham+radio+antenna&w1=Ham+radio&w2=Ham+radio+antenna&w
3=Ham+radio+store&c=3&s=59&g=2&.sig=q5V6jo4Q_V5MIDnknSaOrQ> radio
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* Ham
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zMEZ3JwSWQDMTk2MjAwODYEZ3Jwc3BJZAMxNzA1MDYzMTA4BHNlYwNzbG1vZARzdGltZQMxM
Tg2MTk4MjQz?t=ms&k=Ham+radio+store&w1=Ham+radio&w2=Ham+radio+antenna&w3=
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<http://us.ard.yahoo.com/SIG=12jb50t31/M=493064.11135488.11710474.867457
8/D=groups/S=1705063108:NC/Y=YAHOO/EXP=1186205443/A=4776365/R=0/SIG=11mj
2s6kj/*http://advision.webevents.yahoo.com/green/index.html> a Better
Planet

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Featured Y! Groups

and
<http://us.ard.yahoo.com/SIG=12jd98uqi/M=493064.11127061.11695037.867457
8/D=groups/S=1705063108:NC/Y=YAHOO/EXP=1186205443/A=4763760/R=0/SIG=11ou
7otip/*http://advision.webevents.yahoo.com/bestofyahoogroups/> category
pages.

There is something

for everyone.

Real Food Group

on
<http://us.ard.yahoo.com/SIG=12j3eh4ho/M=493064.11036139.11614791.867457
8/D=groups/S=1705063108:NC/Y=YAHOO/EXP=1186205443/A=4725795/R=0/SIG=1192
rfjiu/*http://groups.yahoo.com/group/realfood/> Yahoo! Groups

What does real food

mean to you?

.

<http://geo.yahoo.com/serv?s=97359714/grpId=19620086/grpspId=1705063108/
msgId=135/stime=1186198243/nc1=4776365/nc2=4763760/nc3=4725795>

137. Re: Power connections updated!

Yahoo group: 24GHzHam
Date: 2007-08-05 16:16:08 UTC
From: w7glf
Topic: 122 Message: 137

Joe - your knowledge amazes me - thanks for the info!

I did find the following datasheet and have posted it as a file:

http://www.st.northropgrumman.com/velocium/SiteFiles/docs/Discontinued_Product/APH328Crev12.03.pdf

138. New file uploaded to 24GHzHam

Yahoo group: 24GHzHam
Date: 2007-08-05 16:20:04 UTC
From: 24GHzHam@yahoogroups.com
Topic: 31 Message: 138

```
Hello,

This email message is a notification to let you know that
a file has been uploaded to the Files area of the 24GHzHam
group.

File : /APH328Crev12.03.pdf
Uploaded by : w7glf <w7glf@...>
Description : APH328C datasheet

You can access this file at the URL:
http://groups.yahoo.com/group/24GHzHam/files/APH328Crev12.03.pdf

To learn more about file sharing for your group, please visit:
http://help.yahoo.com/help/us/groups/files

Regards,

w7glf <w7glf@...>
```

139. Oops

Yahoo group: 24GHzHam
Date: 2007-08-05 20:26:48 UTC
From: w7glf
Topic: 139 Message: 139

My unit bit the dust either due to an accidental short or my iron was too hot when soldering in the PFET (it lifted the pads). I need to get a new iron. No 5 volts from the regulator anymore as a result no TX or RX and inspection shows no other visible cause.

I am disappointed but it was a learning experience... Not looking for solace just a warning on how fragile these things are to other experimenters. 10 GHz remains my top band.

143. T/R Switching

Yahoo group: 24GHzHam
Date: 2007-08-07 14:34:31 UTC
From: bartram_chris
Topic: 143 Message: 143

Looking at the control board, it appears to me that the PA is switched (as part of the -ve bias interlocking) by grounding the control pin of the LT1083 regulator with Q2 (2N2222). It strikes me that another small BJT, or a small FET (2N7002 etc) could safely be or'ed with Q2 to provide a simple TX mute on receive.

Has anyone else looked at this?

Vy 73

Chris
GW4DGU

144. Re: [24GHzHam] T/R Switching

Yahoo group: 24GHzHam
Date: 2007-08-07 15:50:14 UTC
From: Frank Kelly
Topic: 143 Message: 144

Hi Chris,
If you look in the photos section on the website, you'll find one called TX-RX switching connections. Its shows two low value surface mount resistors in the transmit and receive supply lines that are used for supply current sensing. You can remove the resistors and replace their connectivity with an isolated switch, either solid state or relay, to switch between TX-RX. I used a couple of P channel FETS soldered across the resistor pads with an inverter between the gate drive signals so one is on when the other is off.
Frank WB6CWN

bartram_chris wrote:

> Looking at the control board, it appears to me that the PA is switched
> (as part of the -ve bias interlocking) by grounding the control pin of
> the LT1083 regulator with Q2 (2N2222). It strikes me that another
> small BJT, or a small FET (2N7002 etc) could safely be or'ed with Q2
> to provide a simple TX mute on receive.
>
> Has anyone else looked at this?
>
> Vy 73
>
> Chris
> GW4DGU
>
>

145. Photos added showing how to mount a NDT456 P channel fet. + My transverters.

Yahoo group: 24GHzHam
Date: 2007-08-07 16:49:34 UTC
From: Joseph A. Ruggieri (KI4NPV)
Topic: 145 Message: 145

I have added a photo showing how to mount an NDT456 P-channel fet in place of the two surface mount power resistors.

First remove the two surface mount resistors. I use two Metcal sstc137 tips in my handles. With one iron in each hand you can heat both ends of the resistor the same time and lift it out easily.
You can see from the photo that the fet's drain and source are soldered to the pads where one of the resistors were removed. The resistors that were removed were in parallel so either pad set is fine to use or you can put two jumper bridges and use both sets of pads.
Bend back the gate termaial on the fet to make it easy to solder one end of a 5k (or so) resistor to the gate termaial. The other end of this reisitor goes to the center terminal on the voltage regulator (output).
Now solder a small guage wire to the fet/resistor juction.
This is your low-true enable.
These fets have a very low one resistance .03 ohms so there will be very little voltage drop or heating of the fet.
With this enable open the gate is pulled up to the drain (5v input voltage) through the 5k resistor and the fet is in the off state.
When brought to ground or lower than +2v the fet will be in the full on state with a maximum sink current of 1Ma. This fet's threshold voltage allows for plenty of noise imunity.
I dirve this enable in my beacon directly from the KEYER open collector output. The same arrangement is used in my transverters which I have inculded in the photo section.

Joe KI4NPV

146. help get rig running

Yahoo group: 24GHzHam
Date: 2007-08-22 17:47:46 UTC
From: waqyrridge
Topic: 146 Message: 146

I can not seem to get the receiver to give output on IF out port. I have +16 dbm 11,880 Mhz LO, 7.54v at 4 amp capable supply on 2 red wires, 11.95v on yellow wire, -5.05v 1 amp capable on blue wire and all 4 black wires are grounded. I use locked 1152 Mhz signal source on waveguide input. The LT1083 has 0.04v on left hand pin, 1.28 v on center pin and 7.54v on right pin. All dip switch are in off position.I have tried various FET and even shorted the receive switch position. no luck. Bad SHD board?? I'll work on transmit when receiver is working. Have waveguide switch and stuff ready to go if I can receive. Bill WA6QYR

147. Re: [24GHzHam] help get rig running

Yahoo group: 24GHzHam
Date: 2007-08-22 21:09:43 UTC
From: Eric Smith
Topic: 146 Message: 147

Hmmm... sounds familiar. W7GLF had the same issue. The power supply protection circuit is a rather protective goodie in these, looks like the 7.54V input is high enough to trigger the regulator shutdown circuit, the same one that kills the unit if the -5V isn't there. The -5V circuit really ought to have more like -6, but will work with voltages closer to -5, BUT... the input overvoltage protection circuit uses the negative voltage as a reference apparently... Trick here is to back the 7.54V down to a level that doesn't bugger the protection circuits... provided all else functions, you should be in business!

Now if I can find a 98Mhz crystal for my PLO... and a TX mixer with a frequency doubler on the LO port, I should be on the air... or find another SDH board with a good TX mixer!

Eric
KB7DQH

On Wed, 22 Aug 2007 17:47:46 -0000
"waqyrridge" <waqyrridge@...> wrote:
> I can not seem to get the receiver to give output on IF
> out port. I
> have +16 dbm 11,880 Mhz LO, 7.54v at 4 amp capable supply
> on 2 red
> wires, 11.95v on yellow wire, -5.05v 1 amp capable on
> blue wire and
> all 4 black wires are grounded. I use locked 1152 Mhz
> signal source on
> waveguide input. The LT1083 has 0.04v on left hand pin,
> 1.28 v on
> center pin and 7.54v on right pin. All dip switch are in
> off
> position.I have tried various FET and even shorted the
> receive switch
> position. no luck. Bad SHD board?? I'll work on transmit
> when receiver
> is working. Have waveguide switch and stuff ready to go
> if I can
> receive. Bill WA6QYR
>

148. Re: help get rig running

Yahoo group: 24GHzHam
Date: 2007-08-22 21:25:20 UTC
From: Frank WB6CWN
Topic: 146 Message: 148

Hi Bill,
For starters, your LT1083 has input voltage, but no output (on its center pin). Left to right, the pinout is Gnd, Out, In.
Full datasheet at:
http://www.linear.com/pc/downloadDocument.do?navId=H0,C1,C1003,C1040,C1055,P1278,D2603
Frank

--- In 24GHzHam@yahoogroups.com, "waqyrridge" <waqyrridge@...> wrote:
>
> I can not seem to get the receiver to give output on IF out port. I
> have +16 dbm 11,880 Mhz LO, 7.54v at 4 amp capable supply on 2 red
> wires, 11.95v on yellow wire, -5.05v 1 amp capable on blue wire and
> all 4 black wires are grounded. I use locked 1152 Mhz signal source on
> waveguide input. The LT1083 has 0.04v on left hand pin, 1.28 v on
> center pin and 7.54v on right pin. All dip switch are in off
> position.I have tried various FET and even shorted the receive switch
> position. no luck. Bad SHD board?? I'll work on transmit when receiver
> is working. Have waveguide switch and stuff ready to go if I can
> receive. Bill WA6QYR
>

149. Re: [24GHzHam] help get rig running

Yahoo group: 24GHzHam
Date: 2007-08-23 03:41:04 UTC
From: Jeffrey Pawlan
Topic: 146 Message: 149

Are you really trying to put 1152MHz into the
waveguide input? Please clarify as that won't work.

--- waqyrridge <waqyrridge@...> wrote:

> I can not seem to get the receiver to give output on
> IF out port. I
> have +16 dbm 11,880 Mhz LO, 7.54v at 4 amp capable
> supply on 2 red
> wires, 11.95v on yellow wire, -5.05v 1 amp capable
> on blue wire and
> all 4 black wires are grounded. I use locked 1152
> Mhz signal source on
> waveguide input. The LT1083 has 0.04v on left hand
> pin, 1.28 v on
> center pin and 7.54v on right pin. All dip switch
> are in off
> position.I have tried various FET and even shorted
> the receive switch
> position. no luck. Bad SHD board?? I'll work on
> transmit when receiver
> is working. Have waveguide switch and stuff ready to
> go if I can
> receive. Bill WA6QYR
>
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>
> Yahoo! Groups Links
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Choose the right car based on your needs. Check out Yahoo! Autos new Car Finder tool.
http://autos.yahoo.com/carfinder/

150. LT1083 Circuit info

Yahoo group: 24GHzHam
Date: 2007-08-23 07:05:17 UTC
From: w7glf
Topic: 150 Message: 150

Having nothing better to do I traced the circuit for the LT1083 cutoff and have posted it as a JPEG file and a ExpressPCB SCH file. I could not read the resistor values so I went by what my ohmmeter read. Note that doing some algebra I came up with the formula shown on the sheet for the condition where the LT1083 is enabled (+/- due to tolerances). On mine using -5 volts I found if I raised the red wires above 7.14 volts the regulator would cut off so now I am running 7.1 as the B+. Since the output is 5.48 volts there is more than the minimum 1 volt difference.

Now I have a question - I am trying to restore mine through some micro surgery and it seems to work but I notice the RF2312 chip (near the regulator) seems to get very hot even in receive. Is this normal or do I have another problem to troubleshoot?

153. Re:New file uploaded to 24GHzHam

Yahoo group: 24GHzHam
Date: 2007-08-23 09:17:02 UTC
From: Dave Nelson
Topic: 31 Message: 153

```
hmmmm ok ....
further to last mail .....
maybe that link isnt correct maybe it shouldn' have the "SDH "
infront of it
and it should be labelled as .....files/LT1083_CUTTOFF.jpg

instead as listed in the /files folder ?? or is that a different file ?

cheers
Dave
```

154. Re:New file uploaded to 24GHzHam

Yahoo group: 24GHzHam
Date: 2007-08-24 01:35:46 UTC
From: w7glf
Topic: 31 Message: 154

I guess I need something more specific to understand your comment. When I click on it the JPG comes up - but then I am using Firefox - just tested and it works with Explorer too. Perhaps I need an 8.3 filename for old browsers?

If you tried to open it last night I removed it and the reuploaded it so the two files would have the same name except for the extension. I took off the SDH from in front last night...

--- In 24GHzHam@yahoogroups.com, Dave Nelson <davenn@...> wrote:
>
> hmmmm ok ....
> further to last mail .....
> maybe that link isnt correct maybe it shouldn' have the "SDH "
> infront of it
> and it should be labelled as .....files/LT1083_CUTTOFF.jpg
>
> instead as listed in the /files folder ?? or is that a
different file ?
>
> cheers
> Dave
>

156. RF2312 too hot?

Yahoo group: 24GHzHam
Date: 2007-08-24 07:12:06 UTC
From: w7glf
Topic: 156 Message: 156

I measured the RF2312 case temperature and it is measuring about 45 C (115 F). Seems too hot to me but maybe it is normal. If someone has one running please stick your finger on the RF2312 (near the LT1083) and let me know if it gets hot after 30 seconds or so - I have examined the PC board and measured the voltages around the amp and nothing is obviously wrong. Thanks.

157. more rig running help?

Yahoo group: 24GHzHam
Date: 2007-08-24 22:12:42 UTC
From: waqyrridge
Topic: 157 Message: 157

Thanks for the help on getting power supplies adjusted. I now have 7.26v on the 2 red wires now in receive and there is 7.15 volts in transmit drawing about 4 amps. (No 432 IF input)I put -6.0 volts on the blue wire. That seems to get the LT1083 to put out 5 volts on the center pin. The FET switches now have about 5 volts when off and grounded when on. I have +16 dbm 11,880.071 Mhz LO, All dip switch are in off position.I have tried to hear my 1152 MHz locked source, but still no luck. Jeffery the harmonics of 1152 make 24.192 going into the receive waveguide port. The noise in the 432MHz IF port (FT-817 radio there)doesn't increase when power is applied. With twice the LO, and assume my 1152 is on the nose, I should be looking for a signal at 431.858MHz. Correct? Bad SHD board?? Any other ideas of what I might have wrong. Bill WA6QYR

158. Re: more rig running help?

Yahoo group: 24GHzHam
Date: 2007-08-25 01:27:48 UTC
From: w7glf
Topic: 157 Message: 158

FWIW

You should be hearing plenty of increase in noise on the 817 even with no signal - I had to put 10 dB attenuator in line to make it livable.

I assume you also have the +12 volts hooked up. Another dumb question (I did this once) - the 817 is connected to the IF out and not the IF in. I had my IF relay backwards and could not figure out why no noise increase - I am embarrassed to say how long it was until I figured it out :).

What are you using as an LO and good level (6 - 14 dBm)? Another issue I initially had was that my LO was noisy and I could never hear my signal source until I switched to a very stable LO source. I am now using a crystalled Macom PLO phase locked to a 10 MHz GPS reference. Even without the phase locking it is stable enough for me to hear my source which is another crystalled Macom PLO after everything has warmed up for at least 10 minutes. At first I was trying to use my phase locked Fluke Synthesizer as a 98MHz source for the Macom brick and there was so much phase noise all I could hear was a barely discernable buzz on the 817.

159. Re: more rig running help? More info.

Yahoo group: 24GHzHam
Date: 2007-08-25 02:34:23 UTC
From: w7glf
Topic: 157 Message: 159

I was just playing with mine and the max Rx level with low side injection is with switch 4 OFF and switches 1,2,3 ON. The switch positions make a BIG difference.

If this helps you can pay me back by letting know if your RF2312 chip gets hot on Rx. Everything seems to work so well and the temp is less than the max spec I am tempted to live with it until it burns out. With the Rx level I could probably just jumper it out or they only cost $4 from americanmicrosemiconductor.com. They have a $39 minimum so I guess I will need to buy 10 of them :) Actually it seems like a pretty cool little amplifier if one can live with the 75 ohm impedance :)

160. Re: more rig running help? More info.

Yahoo group: 24GHzHam
Date: 2007-08-25 02:43:05 UTC
From: w7glf
Topic: 157 Message: 160

Actually sorry for taking up bandwidth but earlier in the list I read the switches were only used on Tx so my results seem strange. I do note when PFET is not keyed I am still seeing 3 volts or so on the PA - I wonder if my PFET is being cut off completely. Perhaps some Tx is getting out and quieting the receiver. Back to the test bench...

161. Re: [24GHzHam] Re: more rig running help? More info.

Yahoo group: 24GHzHam
Date: 2007-08-25 03:20:52 UTC
From: Joseph Ruggieri
Topic: 157 Message: 161

Bill,

The 2317 better be hot in both rx and tx modes as it should be powered regardless of mode.
This device is biased to dissipate almost 500MW.
For the switches positions, 1,2,3 are tx IF gain waited 2dB steps. Position four is USB/LSB selection for receive only!.
Sounds like your board is working ok unless you have another problem.

Joe KI4NPV

----- Original Message -----
From: w7glf
To: 24GHzHam@yahoogroups.com
Sent: Friday, August 24, 2007 10:43 PM
Subject: [24GHzHam] Re: more rig running help? More info.

Actually sorry for taking up bandwidth but earlier in the list I read
the switches were only used on Tx so my results seem strange. I do
note when PFET is not keyed I am still seeing 3 volts or so on the PA
- I wonder if my PFET is being cut off completely. Perhaps some Tx is
getting out and quieting the receiver. Back to the test bench...

No virus found in this incoming message.
Checked by AVG Free Edition.
Version: 7.5.484 / Virus Database: 269.12.4/969 - Release Date: 8/23/2007 4:04 PM

162. Re: [24GHzHam] Re: more rig running help? More info.

Yahoo group: 24GHzHam
Date: 2007-08-25 03:23:25 UTC
From: Joseph Ruggieri
Topic: 157 Message: 162

Bill,

I hate when I make spelling errors and don't catch it until after I hit send!

The 2317 better be hot in both rx and tx modes as it should be powered regardless of mode.
This device is biased to dissipate almost 500MW.
For the switches positions, 1,2,3 are tx IF gain weighted 2dB steps. Position four is
USB/LSB selection for receive only!.
Sounds like your board is working ok unless you have another problem.

Joe KI4NPV
----- Original Message -----
From: w7glf
To: 24GHzHam@yahoogroups.com
Sent: Friday, August 24, 2007 10:43 PM
Subject: [24GHzHam] Re: more rig running help? More info.

Actually sorry for taking up bandwidth but earlier in the list I read
the switches were only used on Tx so my results seem strange. I do
note when PFET is not keyed I am still seeing 3 volts or so on the PA
- I wonder if my PFET is being cut off completely. Perhaps some Tx is
getting out and quieting the receiver. Back to the test bench...

No virus found in this incoming message.
Checked by AVG Free Edition.
Version: 7.5.484 / Virus Database: 269.12.4/969 - Release Date: 8/23/2007 4:04 PM

163. Re: more rig running help? More info.

Yahoo group: 24GHzHam
Date: 2007-08-25 03:24:51 UTC
From: w7glf
Topic: 157 Message: 163

More testing - guess switches other than 1 are not making that much difference but they do make some - not sure why. My best compromise between Rx sensitivity and output power seems to be with switch 2 ON and others off. I lose about .4 dBm on Tx but Rx is noticeably better. I also totally disconnected my PFET and am still seeing about 3.6 volts on PA - is this normal? Any help appreciated.

164. Re: more rig running help? More info.

Yahoo group: 24GHzHam
Date: 2007-08-25 03:32:35 UTC
From: w7glf
Topic: 157 Message: 164

Thanks a lot for the info Joe! - I need to add my name to my signature - this is Ray. It looks like I have recovered the board!

165. Re: [24GHzHam] Re: more rig running help? More info.

Yahoo group: 24GHzHam
Date: 2007-08-25 03:32:49 UTC
From: Joseph Ruggieri
Topic: 157 Message: 165

Bill,

Yes, that is normal to see a float voltage on the fet output with the fet turned off. It is not actually Appling power to the P.A device when the fet biased off.
I has something to do with the original current sense circuit.

Joe
----- Original Message -----
From: w7glf
To: 24GHzHam@yahoogroups.com
Sent: Friday, August 24, 2007 11:24 PM
Subject: [24GHzHam] Re: more rig running help? More info.

More testing - guess switches other than 1 are not making that much
difference but they do make some - not sure why. My best compromise
between Rx sensitivity and output power seems to be with switch 2 ON
and others off. I lose about .4 dBm on Tx but Rx is noticeably better.
I also totally disconnected my PFET and am still seeing about 3.6
volts on PA - is this normal? Any help appreciated.

No virus found in this incoming message.
Checked by AVG Free Edition.
Version: 7.5.484 / Virus Database: 269.12.4/969 - Release Date: 8/23/2007 4:04 PM

167. Re: [24GHzHam] Re: more rig running help? More info.

Yahoo group: 24GHzHam
Date: 2007-08-25 03:45:12 UTC
From: Joseph Ruggieri
Topic: 157 Message: 167

Your welcome Ray,

Sorry for the wrong name. I went through the threads and Bill was the only signature I could find.

Joe

----- Original Message -----
From: w7glf
To: 24GHzHam@yahoogroups.com
Sent: Friday, August 24, 2007 11:32 PM
Subject: [24GHzHam] Re: more rig running help? More info.

Thanks a lot for the info Joe! - I need to add my name to my signature - this is Ray. It looks like I have recovered the board!

No virus found in this incoming message.
Checked by AVG Free Edition.
Version: 7.5.484 / Virus Database: 269.12.4/969 - Release Date: 8/23/2007 4:04 PM

168. Re: more rig running help? More info.

Yahoo group: 24GHzHam
Date: 2007-08-25 04:18:02 UTC
From: Frank WB6CWN
Topic: 157 Message: 168

Thanks Joe for your expert help.
Its good to have you in the group.
Frank WB6CWN

--- In 24GHzHam@yahoogroups.com, "Joseph Ruggieri" <jruggieri3@...> wrote:
>
> Your welcome Ray,
>
> Sorry for the wrong name. I went through the threads and Bill was
the only signature I could find.
>
> Joe
>
>
> ----- Original Message -----
> From: w7glf
> To: 24GHzHam@yahoogroups.com
> Sent: Friday, August 24, 2007 11:32 PM
> Subject: [24GHzHam] Re: more rig running help? More info.
>
>
> Thanks a lot for the info Joe! - I need to add my name to my
> signature - this is Ray. It looks like I have recovered the board!
>
>
>
>
>
>
>

>
>
> No virus found in this incoming message.
> Checked by AVG Free Edition.
> Version: 7.5.484 / Virus Database: 269.12.4/969 - Release Date:
8/23/2007 4:04 PM
>

169. WA6QYR's rig troubles continuing

Yahoo group: 24GHzHam
Date: 2007-08-27 16:27:29 UTC
From: waqyrridge
Topic: 169 Message: 169

I have a Verticom LO with 8 and 12 v on it and the N9RIN programmer with an outboard WW2R like lock indicator. LO out put is +16 dBm that I run straight to the LO input of the SDH board. The SDH specs say +16 dbm. Yes I have the 817 connected directly to the board IF out sma. I went throught the coax switch mix up too. I don't get an increase of IF 432 noise when turning on power to rig. With the voltages to the board correct at 7.24 and -6.0v the internal 5 volts now shows up at the LT1083 regulator. How should I chase 432 signals throught the board? Or are there some board level voltages I should check?
Bill WA6QYR

170. Re: WA6QYR's rig troubles continuing

Yahoo group: 24GHzHam
Date: 2007-08-27 23:12:06 UTC
From: Frank WB6CWN
Topic: 169 Message: 170

Bill,
Did you measure the Verticom frequency to be near 11.88GHz?
Frank

--- In 24GHzHam@yahoogroups.com, "waqyrridge" <waqyrridge@...> wrote:
>
> I have a Verticom LO with 8 and 12 v on it and the N9RIN programmer
> with an outboard WW2R like lock indicator. LO out put is +16 dBm that
> I run straight to the LO input of the SDH board. The SDH specs say
+16
> dbm. Yes I have the 817 connected directly to the board IF out sma. I
> went throught the coax switch mix up too. I don't get an increase of
> IF 432 noise when turning on power to rig. With the voltages to the
> board correct at 7.24 and -6.0v the internal 5 volts now shows up at
> the LT1083 regulator. How should I chase 432 signals throught the
> board? Or are there some board level voltages I should check?
> Bill WA6QYR
>

171. First RealTest

Yahoo group: 24GHzHam
Date: 2007-08-28 07:51:37 UTC
From: w7glf
Topic: 171 Message: 171

I took my unit over to KD7TS' house this weekend for its first real test. The only peculiarity was the PLL seemed to go out of lock for tiny amounts of time on voice peaks - I still need to troubleshoot. Strangely did not notice that at all on CW. Power out measured at a little over a watt at compression and that was through a homemade SMA transition - I must have done something right for once.

I still need to get an antenna - I have a one foot NURAD dish but it has two cross polarized WR28 connectors. I tried making a WR28 transition but it doesn't work as far as I can tell. I know 24 GHz through WR28 is a stretch but the dish was a gift and it looks pretty. Also playing with the idea of using my spare DSS dish if I can figure out how to mount it. In any case I have my first 24 GHz 20 foot contact - no records threatened there - still a thrill.

172. Re: WA6QYR's rig troubles continuing

Yahoo group: 24GHzHam
Date: 2007-08-28 08:26:15 UTC
From: w7glf
Topic: 169 Message: 172

If it were me the first thing I would check is the RF2317. It should have voltage on pin 13 - the datasheet is an easy google search. I assume that voltage comes from the +12 supply (yellow wire). It is fed from pin 8 of the RF2312 whose datasheet is also easy to find. RF2312 is fed from the quadrature mixer via L1 and Z12. With a probe going to a spectrum analyzer or even your 817 might be sensitive enough - it should be fairly easy to work your way backwards toward the mixer. But first I would verify the two amplifiers have voltage on their output pins as per the datasheets.

--- In 24GHzHam@yahoogroups.com, "waqyrridge" <waqyrridge@...> wrote:
>
> I have a Verticom LO with 8 and 12 v on it and the N9RIN programmer
> with an outboard WW2R like lock indicator. LO out put is +16 dBm that
> I run straight to the LO input of the SDH board. The SDH specs say +16
> dbm. Yes I have the 817 connected directly to the board IF out sma. I
> went throught the coax switch mix up too. I don't get an increase of
> IF 432 noise when turning on power to rig. With the voltages to the
> board correct at 7.24 and -6.0v the internal 5 volts now shows up at
> the LT1083 regulator. How should I chase 432 signals throught the
> board? Or are there some board level voltages I should check?
> Bill WA6QYR
>

173. Re: WA6QYR's rig troubles continuing - Important PS

Yahoo group: 24GHzHam
Date: 2007-08-28 08:48:21 UTC
From: w7glf
Topic: 169 Message: 173

P.S. Important - it is too late for me to look at 817 schematic but don't assume the antenna is capacitor coupled. If you are going to probe with 817 be sure to have a capacitor in series. Those MMICs have power on their output leads and if the 817 antenna port is inductively coupled it could do damage to the SDH. I seem to remember the 817 antenna port being capacitively coupled on VHF and inductively coupled on HF but not worth taking a chance.

174. WA6QYR rig now "NOISE"!

Yahoo group: 24GHzHam
Date: 2007-08-29 16:56:44 UTC
From: waqyrridge
Topic: 174 Message: 174

After following receive circuit flow Z13 to Z12 to A1 to A2 to sma IF out. I found A2 rf2317 drawing .5 amps with a voltage of 1.23. Some thing killed it. Pulled device off board and jumpered output of rf2312 to sma input circuit. Now have noise and signals. 1152 MHz makes harmonics going into waveguide fine. I don't have to add attenuator on IF out. Lost 15 db of gain without device. Z13 must be a special Mini-circuit-lab device (divider and mixer?). Those receive devices are powered by the yellow wire 12v. A1 should draw 40-100 ma at 5-6v and A2 should have 8.3v at 150 to 180 ma according to spec sheets.
Now to work on transmit side.
Yes both A1 and A2 were warm to hot to touch.
Thanks for ideas and helps from all.
Bill WA6QYR

175. Re: [24GHzHam] WA6QYR rig now "NOISE"!

Yahoo group: 24GHzHam
Date: 2007-08-29 17:21:42 UTC
From: Doug Millar
Topic: 174 Message: 175

Bill-
Good going and good sleuthing!
Glad you are making progress.
Doug K6JEY

At 09:56 AM 8/29/2007, you wrote:

>After following receive circuit flow Z13 to Z12 to A1 to A2 to sma IF
>out. I found A2 rf2317 drawing .5 amps with a voltage of 1.23. Some
>thing killed it. Pulled device off board and jumpered output of rf2312
>to sma input circuit. Now have noise and signals. 1152 MHz makes
>harmonics going into waveguide fine. I don't have to add attenuator on
>IF out. Lost 15 db of gain without device. Z13 must be a special Mini-
>circuit-lab device (divider and mixer?). Those receive devices are
>powered by the yellow wire 12v. A1 should draw 40-100 ma at 5-6v and
>A2 should have 8.3v at 150 to 180 ma according to spec sheets.
>Now to work on transmit side.
>Yes both A1 and A2 were warm to hot to touch.
>Thanks for ideas and helps from all.
>Bill WA6QYR
>
>

176. Re: WA6QYR rig now "NOISE"!

Yahoo group: 24GHzHam
Date: 2007-08-30 03:41:04 UTC
From: w7glf
Topic: 174 Message: 176

Great news! You probably saw my earlier post where I found a place to buy rf2312s and rf2317s (americanmicrosemi.com). There seems to be so much unneeded gain (as I mentioned I have 10 dB of attenuation and Rx is still a might too hot) that jumpering seems the smart way to go. You probably are aware the 817 does have an Rx gain setting in the factory calibration menu but I think it is pretty much topped out on 432.

--- In 24GHzHam@yahoogroups.com, Doug Millar <dougnhelen@...> wrote:
>
>
> Bill-
> Good going and good sleuthing!
> Glad you are making progress.
> Doug K6JEY
>
>
>
> At 09:56 AM 8/29/2007, you wrote:
>
> >After following receive circuit flow Z13 to Z12 to A1 to A2 to sma IF
> >out. I found A2 rf2317 drawing .5 amps with a voltage of 1.23. Some
> >thing killed it. Pulled device off board and jumpered output of rf2312
> >to sma input circuit. Now have noise and signals. 1152 MHz makes
> >harmonics going into waveguide fine. I don't have to add attenuator on
> >IF out. Lost 15 db of gain without device. Z13 must be a special Mini-
> >circuit-lab device (divider and mixer?). Those receive devices are
> >powered by the yellow wire 12v. A1 should draw 40-100 ma at 5-6v and
> >A2 should have 8.3v at 150 to 180 ma according to spec sheets.
> >Now to work on transmit side.
> >Yes both A1 and A2 were warm to hot to touch.
> >Thanks for ideas and helps from all.
> >Bill WA6QYR
> >
> >
>

177. WA6QYR radio working

Yahoo group: 24GHzHam
Date: 2007-09-03 02:45:37 UTC
From: waqyrridge
Topic: 177 Message: 177

Thanks to Dave and the Lab, I now have now a working 1 w 24 GHz rig. first lab contacts showed IF radio to need to be 40 Khz up. The dimensions Jeffrey provided made my filter at 24.6 GHz. Dave WA6CGR walked the tuning down to 24.192. The LO rejection is something over 40 db. thanks Bill wa6qyr

178. Re: [24GHzHam] WA6QYR radio working

Yahoo group: 24GHzHam
Date: 2007-09-03 02:58:57 UTC
From: Miguel Ramirez
Topic: 177 Message: 178

Congrats! Bill F/B on ur new 1 watt 24 ghz radio! Kudos to u de YLZ

waqyrridge <waqyrridge@...> wrote: Thanks to Dave and the Lab, I now have now a working 1 w 24 GHz rig.
first lab contacts showed IF radio to need to be 40 Khz up. The
dimensions Jeffrey provided made my filter at 24.6 GHz. Dave WA6CGR
walked the tuning down to 24.192. The LO rejection is something over
40 db. thanks Bill wa6qyr

179. Re: [24GHzHam] WA6QYR radio working

Yahoo group: 24GHzHam
Date: 2007-09-03 03:00:13 UTC
From: rabremer@juno.com
Topic: 177 Message: 179
Attachments: 2 described; binary payloads are missing from this source WARC

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[ Attachment content not displayed ]
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180. Re: [24GHzHam] WA6QYR radio working

Yahoo group: 24GHzHam
Date: 2007-09-03 13:05:54 UTC
From: Zack Widup
Topic: 177 Message: 180

I was thinking about the tuning of those waveguide filter screws. Ideally, the lengths of the screws into the waveguide would be the way to go, but those look darn near impossible to measure, what with the 90 degree bend at each end. Even without those, measuring something inside a tiny waveguide would be difficult.

The screws can't be assumed to be all identical lengths, so I'd expect some difference in tuning. There is a photo in the photos section that shows someone else's tuning lengths and they're slightly different than Jeffrey's.

I guess either set of dimensions is a good starting point, though!

73, Zack W9SZ

On Mon, 3 Sep 2007, waqyrridge wrote:

> Thanks to Dave and the Lab, I now have now a working 1 w 24 GHz rig.
> first lab contacts showed IF radio to need to be 40 Khz up. The
> dimensions Jeffrey provided made my filter at 24.6 GHz. Dave WA6CGR
> walked the tuning down to 24.192. The LO rejection is something over
> 40 db. thanks Bill wa6qyr
>

181. Bill's Radio

Yahoo group: 24GHzHam
Date: 2007-09-03 16:40:00 UTC
From: Doug Millar
Topic: 181 Message: 181

Hi Bill,
Great Going. I knew you would do it. Thanks to Dave too. let's make
some Q's during the contest.
Bring the radio to the meeting so we can see how you did it!
Doug

182. Contacts at last

Yahoo group: 24GHzHam
Date: 2007-09-13 05:57:18 UTC
From: w7glf
Topic: 182 Message: 182

During the VHF contest I went to a mountain top and took SDH and 22 dBi horn I threw together with me (still working on converting a 30 GHz NURAD dish to 24 GHz). I worked KD7TS about 39 miles and W7LHL about 58 miles. I got very good reports.

I still have not done a cold sky / ground measurement - kind of curious to see if I see any difference. Hope it does not rain all this weekend so I can make the test without getting soaked but this is the Pacific Northwest.

Thanks to the group for all of the info - certainly helped get me going - especially the great info from Joe on PFET and KC6QHP on filter starting adjustments. Now it's time for incremental improvements and some rain scatter experiments - no shortage of rain here :)...

Now KB7DQH just has to figure out how to get around his low output problem and we will have 4 stations on 24 GHz in the immediate area.

Ray W7GLF

183. Re: [24GHzHam] Contacts at last

Yahoo group: 24GHzHam
Date: 2007-09-13 06:05:10 UTC
From: Frank Kelly
Topic: 182 Message: 183

Congrats Ray. Post some pics and Go get 'em.
Tony has his SDH running as well as Bill WA6QYR.
Frank

w7glf wrote:

> During the VHF contest I went to a mountain top and took SDH and 22
> dBi horn I threw together with me (still working on converting a 30
> GHz NURAD dish to 24 GHz). I worked KD7TS about 39 miles and W7LHL
> about 58 miles. I got very good reports.
>
> I still have not done a cold sky / ground measurement - kind of
> curious to see if I see any difference. Hope it does not rain all
> this weekend so I can make the test without getting soaked but this is
> the Pacific Northwest.
>
> Thanks to the group for all of the info - certainly helped get me
> going - especially the great info from Joe on PFET and KC6QHP on
> filter starting adjustments. Now it's time for incremental
> improvements and some rain scatter experiments - no shortage of rain
> here :)...
>
> Now KB7DQH just has to figure out how to get around his low output
> problem and we will have 4 stations on 24 GHz in the immediate area.
>
> Ray W7GLF
>
>

184. Results in PA

Yahoo group: 24GHzHam
Date: 2007-09-14 07:21:16 UTC
From: Jaap Last
Topic: 184 Message: 184

There are not so many messages on this server from the Netherlands yet. Here is one that describes our succesfull tests with the Endwavemodules to put hem on air!

Eene, PA3CEG and myself, Jaap, PA0T have kept absolute silence on this server about our existence and plans with the Endwave module. We decided that (last) Tuesday should be the day we would bring our four modules to life. We got very much help from the messages of everyone on this server.

Before we started we started I made a nice testboard with all the right voltages, securities and cooling and Eene had already tuned three of the four filters to the Euopean frequency of 24048 MHz. The first thing we had to do was measure them as carefull as we could. All of the 6-screw filters showed a bandloss of 2,8 dB and at 144 MHz down the signal was (best filter) -20 dB. On the high side that was only 10 dB down.

The 11-screw filter is very difficult to tune and we think the results are not yet good enough (7 dB loss, same curve), we think we need a better measureplace. We couldn't measure higher IF's, our brick had some troubles.

After tuning and measuring the last filter we put the modules on the plate. Of course we first removed the in- and outfilters. Eene discovered then two 0,2 mm gaps right under the amps. We filled them up with 0,2 mm coppersheets for optimal cooling.

The modules took 2,85 Amps with RX and TX on. As IF we used 144 MHz. LO was 7 dBm (seemed more then enough, nice noice). RX seemed very good in comparison with a DB6NT mixer, but we didn't measure the noise. Then we put on the TX, used signal was 6 dBm. We got at once 1,9 Watts output. The quality of the signal seemed very good.

We were satisfied for the moment and our day was over.

We both took some modules home to try other IF's and make the RX/TX. We are curious if an IF of about 1008 MHz will work. We have a project here with some friends to buy transverters on 1008 MHz, that's a common IF for the European 24 and 47 MHz frequencies. We know the mixers of the Endwave are not made for this frequency, but who knows what is possible...

For other tests on the modules (noise, if-rejection at RX), we have first to change our measurepossibilities and need the help of other friends.

We also want to try to get our CTI-oscillators on 12575.5 MHz lower in frequency. Does anyone have some experience with that? (Unlocked we can turn the frequency below 12 GHz and replacing the crystal seems easy. But how it exactly works, we don't know)

We want to thank anyone who put their experiences with the modules on this server. It helped us a lot!

Eene, PA3CEG and Jaap PA0T (JO33)

185. Uploaded Photos

Yahoo group: 24GHzHam
Date: 2007-09-16 19:46:38 UTC
From: w7glf
Topic: 185 Message: 185

I posted my unit as it is today. My question of this point is whether case is enough heatsink for SDH. So far I have not noticed SDH unit getting hot but I need to do some more testing. The NURAD dish was for 30 GHz so I had to enlarge the feed horn opening and feed it with hobby brass circular waveguide. Initial testing shows 1.3 SWR which is low enough that I don't want to fool around with probe length. The nesting brass tube has a brass plate soldered on the end and seems to work well as a sliding short. The guts of the sequencer are hidden under the power interconnects - the DEMI relay board is just to key SDH PFET. Now I have to figure out how to mount box and dish so as the keep UT-141 runs at a minimum.

186. Success with my 24 Ghz radio!

Yahoo group: 24GHzHam
Date: 2007-09-17 16:23:17 UTC
From: Tony Long
Topic: 186 Message: 186

First, Here are some pictures of my radio nearly complete...

http://gallery.infosite.com/24ghzrig

The LCD doesn't do anything useful right now but will eventually display status of waveguide switch, output power, supply voltages and currents, total on-time, etc.

I managed to finish the radio in time for the contest this weekend and made three contacts with just the open waveguide. My best DX was around 40 miles from Siganl Hill in Long Beach, CA to "Secret Site 51."

http://gallery.infosite.com/uwave2007

My home-made waveguide switch was deisgned specifically for this radio and actually turned out pretty well. 17 dB return loss on tehr eceive port, 0.45 dB insertion loss, and just 0.35 dB insertion loss on the transmit port.

-Tony KC6QHP

187. Re: [24GHzHam] Success with my 24 Ghz radio!

Yahoo group: 24GHzHam
Date: 2007-09-18 15:01:15 UTC
From: Zack Widup
Topic: 186 Message: 187

Great photos! I wish I had been able to get in on the 10 GHz contest this year but other things got in the way.

I do have a few questions that have come to mind since I've become more and more interested in the higher bands:

Where does one get primary feeds for dish systems to be used at 24, 47, 76 GHz and up? I'm thinking particularly about Cassegrain feeds. I've seen some designs on the web but I don't have access to a machine shop and wonder if I could build or buy something that doesn't cost a fortune. It appears that regular hobby brass tubing of the proper diameters can be found in hardware stores for use as circular waveguide.

Where does one get a hyperbolic reflector for a Cassegrain feed?

Has anyone ever considered mass-producing waveguide switches for these bands? I imagine they would be quite expensive but maybe someone with a machine shop could make them somewhat cheaper than commercial units.

73, Zack W9SZ

On Mon, 17 Sep 2007, Tony Long wrote:

> First, Here are some pictures of my radio nearly complete...
>
> http://gallery.infosite.com/24ghzrig
>
> The LCD doesn't do anything useful right now but will eventually display
> status of waveguide switch, output power, supply voltages and currents,
> total on-time, etc.
>
> I managed to finish the radio in time for the contest this weekend and
> made three contacts with just the open waveguide. My best DX was around
> 40 miles from Siganl Hill in Long Beach, CA to "Secret Site 51."
>
> http://gallery.infosite.com/uwave2007
>
> My home-made waveguide switch was deisgned specifically for this radio and
> actually turned out pretty well. 17 dB return loss on tehr eceive port,
> 0.45 dB insertion loss, and just 0.35 dB insertion loss on the transmit
> port.
>
> -Tony KC6QHP
>

188. Re: [24GHzHam] Success with my 24 Ghz radio!

Yahoo group: 24GHzHam
Date: 2007-09-18 16:40:27 UTC
From: Tony Long
Topic: 186 Message: 188

> Where does one get primary feeds for dish systems to be used at 24, 47, 76
> GHz and up? I'm thinking particularly about Cassegrain feeds. I've seen
> some designs on the web but I don't have access to a machine shop and
> wonder if I could build or buy something that doesn't cost a fortune. It
> appears that regular hobby brass tubing of the proper diameters can be
> found in hardware stores for use as circular waveguide.

I don't know of any common solution to this. I think most people either get lucky with a good surplus find or spend significant effort in manufacturing their own. A penny feed supposedly works (how well I don't know) and is easy to make. I think a cassegrain subreflector and matching horn for the DSS dishes would be great for 47 and 76 GHz.

> Where does one get a hyperbolic reflector for a Cassegrain feed?

From what I understand, people either get them surplus (rarely) or have them machined on a CNC lathe (also rarely).

>
> Has anyone ever considered mass-producing waveguide switches for these
> bands? I imagine they would be quite expensive but maybe someone with a
> machine shop could make them somewhat cheaper than commercial units.

The switch I built took me at least 25 hours of actual machining and a lot of time in design. Its actually 6 pieces, 4 of which require high precision in multiple places. Granted I'm not a machinist by trade or training, its still a complex part to build. There are numerous internal and external features, and the rotor is also tricky to make. The antenna and test ports were made with a wire EDM process which is really a great way to make a waveguide in a block. I definitely understand why the commercial units are expensive. Making a traditional 4-port cube style rotary switch would be easier, as the integrated H-bend added a significant chunk of machining time. Certainly someone with access to CNC tools could make these switches, but I would guess the raw materials alone (with motor) would be $100.

-Tony

189. waveguide switch

Yahoo group: 24GHzHam
Date: 2007-09-19 09:22:27 UTC
From: J.E.M. Smeets smeets
Topic: 189 Message: 189
Attachments: 2 described; binary payloads are missing from this source WARC

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[ Attachment content not displayed ]
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191. RE: [24GHzHam] waveguide switch

Yahoo group: 24GHzHam
Date: 2007-09-19 18:58:38 UTC
From: Steen Gulstorff
Topic: 189 Message: 191

Hi Zack

Just returned from weinheim Ham meeting, where i got the price list from Hubert.

Expensive but nice . One example 4 port WG switch= 90 EUR.

73 de OZ2TG, Steen

From: 24GHzHam@yahoogroups.com [mailto:24GHzHam@yahoogroups.com] On Behalf Of Zack Widup
Sent: 19. september 2007 17:09
To: 24GHzHam@yahoogroups.com
Subject: Re: [24GHzHam] waveguide switch

Hi Jac,

Thanks. He has quite a lot of neat things. I wonder what his prices are like? I will have to ask him.

73, Zack W9SZ

On Wed, 19 Sep 2007, J.E.M. Smeets smeets wrote:

> hello all !
>
> If you are not able to make a waveguideswitch yourself, try DG1KBF Hubert
> Krause in Germany :
>
> http://www.micro- <http://www.micro-mechanik.de/> mechanik.de/
>
> He has a lot of mechanical microwave things
>
> have phun
>
> jac pe1kxh
>

192. looking for spare 12.5ghz CTI PDRO

Yahoo group: 24GHzHam
Date: 2007-09-20 13:44:51 UTC
From: Mike Kana
Topic: 192 Message: 192

Hi all

Does anyone have a spare CTI 12.5GHz DRO they would part with?

Tnx
Mike
AA9IL

193. Source for SDH units?

Yahoo group: 24GHzHam
Date: 2007-09-24 02:02:40 UTC
From: starbuck5250
Topic: 193 Message: 193

Hi! I've been following the exploits of the folks on the West Coast and now that the microwave contest season is over I'm looking to get the pieces/parts to get going on 24.

I've reviewed the messages in the group, but I can't see where one can acquire one of the units to modify. I may be using the wrong search terms in Ebay...

Can an East Coaster get hold of one of these units?

73 de KC2HIZ, Buck

194. Re: [24GHzHam] Source for SDH units?

Yahoo group: 24GHzHam
Date: 2007-09-24 06:31:21 UTC
From: Jaap Last
Topic: 193 Message: 194

Hello Buck,

Last Saturday I met Kees, PA0KBT on a flee market in the Netherlands. He still has some units en 12.575.5 MHz CTI-oscillators left (Mike, AA9IL, are you reading this?). There are also a lot of nice small (original) power supplies with all the right voltages: +7.3, +12 and -6 (-36V until -54V in).
You can find Kees on Ebay (search for PA0KBT)
Of course it's a long way to the East Coast.

'73 Jaap PA0T

----- Original Message -----
From: starbuck5250
To: 24GHzHam@yahoogroups.com
Sent: Monday, September 24, 2007 4:02 AM
Subject: [24GHzHam] Source for SDH units?

Hi! I've been following the exploits of the folks on the West Coast
and now that the microwave contest season is over I'm looking to get
the pieces/parts to get going on 24.

I've reviewed the messages in the group, but I can't see where one
can acquire one of the units to modify. I may be using the wrong
search terms in Ebay...

Can an East Coaster get hold of one of these units?

73 de KC2HIZ, Buck

195. Re: [24GHzHam] Source for SDH units?

Yahoo group: 24GHzHam
Date: 2007-09-24 06:52:10 UTC
From: Jaap Last
Topic: 193 Message: 195

Sorry, I was wrong. Kees was of course the old scource and as I know he is sold out. I meant Piet Quakkelstein. He has no homepage and I don't know his email.

His address: Westhavenplaats 28, NL 3131 PT, Vlaardingen (Netherlands). Phone 0031 104344523.

Jaap PA0T

----- Original Message -----

From: Jaap Last
To: 24GHzHam@yahoogroups.com
Sent: Monday, September 24, 2007 8:31 AM
Subject: Re: [24GHzHam] Source for SDH units?

Hello Buck,

Last Saturday I met Kees, PA0KBT on a flee market in the Netherlands. He still has some units en 12.575.5 MHz CTI-oscillators left (Mike, AA9IL, are you reading this?). There are also a lot of nice small (original) power supplies with all the right voltages: +7.3, +12 and -6 (-36V until -54V in).
You can find Kees on Ebay (search for PA0KBT)
Of course it's a long way to the East Coast.

'73 Jaap PA0T

----- Original Message -----
From: starbuck5250
To: 24GHzHam@yahoogroups.com
Sent: Monday, September 24, 2007 4:02 AM
Subject: [24GHzHam] Source for SDH units?

Hi! I've been following the exploits of the folks on the West Coast
and now that the microwave contest season is over I'm looking to get
the pieces/parts to get going on 24.

I've reviewed the messages in the group, but I can't see where one
can acquire one of the units to modify. I may be using the wrong
search terms in Ebay...

Can an East Coaster get hold of one of these units?

73 de KC2HIZ, Buck

196. Output power instability

Yahoo group: 24GHzHam
Date: 2007-09-24 16:17:03 UTC
From: jefdear
Topic: 196 Message: 196

Hello, all

I'm experimenting my new setup with a SDH trcv marked : A0770264S00104 /57042-1148.The board id: B16-0076-004 Ver 2.6. The waveguide filter is marked : TX: 25.851 and RX 24.843
Voltage setup is : yelow: +12.00V blue: -6.00V red: 7.35V (rock stable)
The L.O. is a CTI PDRO-N-14333@12.5755 GHz +12.00V (output power is stable too)
For the test, i put 8dBm@500 MHz, and i see erratic output power : sometimes full power, sometimes nothing. i have see the phenomen on two differents detectors type : a simple gun horn connected to a scope at 10 inches and a bolometer probe at 5 inches. Of course i'm far away to not influence the setup.No small mechanical shock modify this state.I've verified the voltage at the LT1083, the voltage don't move.

Any suggestion ?

Jef, ON1MGQ

197. Re: [24GHzHam] Output power instability

Yahoo group: 24GHzHam
Date: 2007-09-24 16:25:54 UTC
From: Jaap Last
Topic: 196 Message: 197

Hello Jef,

Did you put a dummyload on the RX side? And/or the power off from the RX-side?
Looks like oscillating via the RX.

Jaap PA0T

----- Original Message -----
From: jefdear
To: 24GHzHam@yahoogroups.com
Sent: Monday, September 24, 2007 6:17 PM
Subject: [24GHzHam] Output power instability

Hello, all

I'm experimenting my new setup with a SDH trcv marked : A0770264S00104
/57042-1148.The board id: B16-0076-004 Ver 2.6. The waveguide filter
is marked : TX: 25.851 and RX 24.843
Voltage setup is : yelow: +12.00V blue: -6.00V red: 7.35V (rock stable)
The L.O. is a CTI PDRO-N-14333@12.5755 GHz +12.00V (output power is
stable too)
For the test, i put 8dBm@500 MHz, and i see erratic output power :
sometimes full power, sometimes nothing. i have see the phenomen on
two differents detectors type : a simple gun horn connected to a scope
at 10 inches and a bolometer probe at 5 inches. Of course i'm far away
to not influence the setup.No small mechanical shock modify this
state.I've verified the voltage at the LT1083, the voltage don't move.

Any suggestion ?

Jef, ON1MGQ

198. Motorized waveguide switch complete

Yahoo group: 24GHzHam
Date: 2007-09-24 16:41:20 UTC
From: Tony Long
Topic: 198 Message: 198

This weekend I managed to write my first useful microcontroller code. I am using an Arduino (http://www.arduino.cc) microcontroller board which is both very easy to program and full of useful features for about $35. The program I wrote commands a standard RC servo to move my waveguide switch into either the transmit or receive mode, and also commands the SDH module to transmit or receive. Also it displays TRANSMITTING or RECEIVING on the front panel LCD. On the second line of the LCD is an 'uptime' clock, showing in hours, minutes and seconds, how long the power has been on. This gives me an idea as to whether the ovenized 12.5755 GHz oscillator has warmed up and is sufficiently stable. In practice I have not had any problem with the stability of this oscillator.

There are a few little quirks with the code, but none that I care enough about to fix. First off is that when you initially power on the radio, it doesn't display what mode you are in. Once you've flipped the toggle switch into the other mode though, the mode display works fine. Also, the uptime clock will reset after around 9 hours. This is because the uptime is calculated using the millis() function which overflows and resets. A real-time clock would fix this or maybe some more complex code.

I've uploaded some photos of the servoactuated waveguide switch here: http://gallery.infosite.com/24ghzrig (see the last few photos)

-Tony KC6QHP

199. 24 GHz components

Yahoo group: 24GHzHam
Date: 2007-09-26 14:35:14 UTC
From: Steve & Ginny Grudzinski
Topic: 198 Message: 199

Greetings All,

I am in need of 24GHz waveguide fittings, along with a circulator and switch for my unit. If there is anyone interested in parting with their spare components, I would like to talk with you. Feeding the DB6NT straight into the horn just did not cut it.

Thanks,
Steve, ad6ht

200. 24 GHz components

Yahoo group: 24GHzHam
Date: 2007-09-26 15:16:37 UTC
From: Dick Kolbly
Topic: 198 Message: 200

Steve:

I purchased some WR-42 isolators (two-port devices) from pyrojoseph on eBay. These have been very useful, and the price was reasonable. If you are using a switch, you may not need a three-port circulator as well. The San Bernardino Microwave Society has a few WR-42 waveguide switches that they will sell for $150. You can see what these switches look like at www.eventhorizons.com/products.

Most of the 24 GHz stuff uses WR-42, but I have found WR-28 hardware, which is much more readily available, works quite well. If you need raw hardware, like flanges and waveguide tubing, Penn Engineering in North Hollywood, CA has been willing to deal with us in small quantities and accept payment via credit card. I have bought quite a bit of stuff from them over the years.

Hopefully, this information will be useful to you. If I can be of further help, let me know.

73, Dick K6HIJ

At 07:35 AM 9/26/2007, you wrote:

>Greetings All,
>
>I am in need of 24GHz waveguide fittings, along with a circulator
>and switch for my unit. If there is anyone interested in parting
>with their spare components, I would like to talk with you. Feeding
>the DB6NT straight into the horn just did not cut it.
>
>Thanks,
>Steve, ad6ht
>
>

201. Ensemble Communication

Yahoo group: 24GHzHam
Date: 2007-10-04 22:03:32 UTC
From: db0aja
Topic: 201 Message: 201

Hi,

I'm looking for a crontol box for the Ensemble Communication 24GHz ODU
and maybe also an 24GHz ODU. All information about these units is welcome.

73, Rainer

202. 11-12.0GHz Verticom Synth on ebay

Yahoo group: 24GHzHam
Date: 2007-11-01 16:44:29 UTC
From: Frank WB6CWN
Topic: 202 Message: 202

check out item 190168408506
The seller had several of them a couple of weeks ago.
These work well with the Endwave units.
Frank WB6CWN

203. Re: [24GHzHam] 11-12.0GHz Verticom Synth on ebay

Yahoo group: 24GHzHam
Date: 2007-11-01 17:09:32 UTC
From: Chris Bartram
Topic: 202 Message: 203

Frank

> check out item 190168408506

Thanks for the tip...

Vy 73

Chris
GW4DGU

204. 12.5 GHz local oscillator

Yahoo group: 24GHzHam
Date: 2007-11-04 15:57:03 UTC
From: Gary VK2KYP
Topic: 204 Message: 204

Hi All,
I am looking for a couple of Verticom or similaiar synthezers to use a microwave LO's. Does anyone have some spare units 73 Gary VK2KYP

205. Re: [24GHzHam] 12.5 GHz local oscillator

Yahoo group: 24GHzHam
Date: 2007-11-04 16:42:49 UTC
From: Frank Kelly WB6CWN
Topic: 204 Message: 205

Gary,
See my previous message posted a few days ago. There is a seller on eBay with some.
Frank
----- Original Message -----
From: Gary VK2KYP
To: 24GHzHam@yahoogroups.com
Sent: Sunday, November 04, 2007 7:57 AM
Subject: [24GHzHam] 12.5 GHz local oscillator

Hi All,
I am looking for a couple of Verticom or similaiar synthezers to use a
microwave LO's. Does anyone have some spare units 73 Gary VK2KYP

206. Re: 12.5 GHz local oscillator

Yahoo group: 24GHzHam
Date: 2007-11-04 23:24:54 UTC
From: Gary VK2KYP
Topic: 204 Message: 206

--- In 24GHzHam@yahoogroups.com, "Frank Kelly WB6CWN" <fm.kelly@...>
wrote:
>
> Gary,
> See my previous message posted a few days ago. There is a seller
on eBay with some.
> Frank
> ----- Original Message -----
> From: Gary VK2KYP
> To: 24GHzHam@yahoogroups.com
> Sent: Sunday, November 04, 2007 7:57 AM
> Subject: [24GHzHam] 12.5 GHz local oscillator
>
>
> Hi All,
> I am looking for a couple of Verticom or similaiar synthezers to
use a
> microwave LO's. Does anyone have some spare units 73 Gary VK2KYP
>
Hi Frank, I contacted this Ebayer but unfortunately he does not have
any left so I am still searching, 73 Gary VK2KYP

207. RE: [24GHzHam] Re: 12.5 GHz local oscillator

Yahoo group: 24GHzHam
Date: 2007-11-04 23:39:42 UTC
From: Randy Bynum
Topic: 204 Message: 207

Gary,

Go to this auction that I won:
http://cgi.ebay.com/ebaymotors/ws/eBayISAPI.dll?ViewItem
<http://cgi.ebay.com/ebaymotors/ws/eBayISAPI.dll?ViewItem&ih=004&sspagename=
STRK%3AMEWN%3AIT&viewitem=&item=140175370629&rd=1>
&ih=004&sspagename=STRK%3AMEWN%3AIT&viewitem=&item=140175370629&rd=1 and see
if that is the item you are looking for. If so, contact the seller, I
suspect he may have more but I really do not know.

Good luck in your search.

73,

Randy Bynum, NR6CA
Reno, NV DM09cj
Soda Springs, CA CM99th
160 meters to 80 GHz plus laser
http://www.nr6ca.org

From: 24GHzHam@yahoogroups.com [mailto:24GHzHam@yahoogroups.com] On Behalf
Of Gary VK2KYP
Sent: Sunday, November 04, 2007 3:25 PM
To: 24GHzHam@yahoogroups.com
Subject: [24GHzHam] Re: 12.5 GHz local oscillator

Hi All,
I am looking for a couple of Verticom or similaiar synthezers to use a
microwave LO's. Does anyone have some spare units 73 Gary VK2KYP

.

<http://geo.yahoo.com/serv?s=97359714/grpId=19620086/grpspId=1705063108/msgI
d=206/stime=1194218699/nc1=4670553/nc2=4836042/nc3=5008826>

208. Re: 12,5Ghz oscillator

Yahoo group: 24GHzHam
Date: 2007-11-20 18:38:57 UTC
From: pa0vtw
Topic: 208 Message: 208

to Randy NR6ca
do you have sam info abaut the microsource
from 10,575-13,35
pleace let mi know
i have sam info of it but not all
73` Piet pa0vtw

209. RE: [24GHzHam] Re: 12,5Ghz oscillator

Yahoo group: 24GHzHam
Date: 2007-11-20 18:43:22 UTC
From: Randy Bynum
Topic: 208 Message: 209

Hello Piet,

Sorry but I have no info about them. I would like any info you have. So far I have not opened my unit to look. When I begin work on my unit I will share what I find with you.

73,

Randy Bynum, NR6CA
Reno, NV DM09cj
Soda Springs, CA CM99th
160 meters to 80 GHz plus laser
http://www.nr6ca.org

From: 24GHzHam@yahoogroups.com [mailto:24GHzHam@yahoogroups.com] On Behalf Of pa0vtw
Sent: Tuesday, November 20, 2007 10:39 AM
To: 24GHzHam@yahoogroups.com
Subject: [24GHzHam] Re: 12,5Ghz oscillator

to Randy NR6ca
do you have sam info abaut the microsource
from 10,575-13,35
pleace let mi know
i have sam info of it but not all
73` Piet pa0vtw

210. 12,5 Ghz oscillator

Yahoo group: 24GHzHam
Date: 2007-11-20 21:00:27 UTC
From: pa0vtw
Topic: 210 Message: 210

hallo Randy

i have 3 fotos in my album
the first is the pc boerd from the yig
j6a-j9a driver coil
j7a-j8a heater coil
j5a ground
j2a 10 ohm risistor.....plus

on the 15 pins socet j1

pin 8 ground
pin 7 heater 50.000Mc ref. xtal
pin15 15v dc in

that is all for the moment the yig is running but not locking

73` piet

211. New file uploaded to 24GHzHam

Yahoo group: 24GHzHam
Date: 2007-11-21 00:36:31 UTC
From: 24GHzHam@yahoogroups.com
Topic: 31 Message: 211

```
Hello,

This email message is a notification to let you know that
a file has been uploaded to the Files area of the 24GHzHam
group.

File : /SNP10-13 Synthesizer D10EI.pdf
Uploaded by : vk2kyp <gbeech@...>
Description : microsource SNP-1013-505-01oscillator module

You can access this file at the URL:
http://groups.yahoo.com/group/24GHzHam/files/SNP10-13%20Synthesizer%20D10EI.pdf

To learn more about file sharing for your group, please visit:
http://help.yahoo.com/help/us/groups/files

Regards,

vk2kyp <gbeech@...>
```

212. Microsource oscillator module SNP101341001

Yahoo group: 24GHzHam
Date: 2007-11-21 01:05:33 UTC
From: Gary VK2KYP
Topic: 212 Message: 212

HI All,
I have just posted some data on a Microsource oscillator which is similiar to the one that has been on Ebay recently.

Regards Gary VK2KYP

213. Re: 12,5 Ghz oscillator

Yahoo group: 24GHzHam
Date: 2007-11-23 09:50:11 UTC
From: Gary VK2KYP
Topic: 210 Message: 213

Hi Piet,
How did you work out the rails required for the oscillator module?

Did you see my file I uploaded on a similiar module and do you think
it corresponds with this device.

73 Gary
--- In 24GHzHam@yahoogroups.com, "pa0vtw" <pa0vtw@...> wrote:
>
> hallo Randy
>
> i have 3 fotos in my album
> the first is the pc boerd from the yig
> j6a-j9a driver coil
> j7a-j8a heater coil
> j5a ground
> j2a 10 ohm risistor.....plus
>
> on the 15 pins socet j1
>
> pin 8 ground
> pin 7 heater 50.000Mc ref. xtal
> pin15 15v dc in
>
> that is all for the moment the yig is running but not locking
>
> 73` piet
>

215. 12,5 Ghz oscillator

Yahoo group: 24GHzHam
Date: 2007-11-24 09:12:20 UTC
From: pa0vtw
Topic: 210 Message: 215

hi Gary

yes it correspond with this device

my 15 v first was a little to high

on J1 15 pins connector

pin 8 ground
pin 7 12v x tal oscillator
pin 15 8v
and my yig is locking on 12,00020
it works fine
and very stable

now we are looking for the other
pins on the connector

216. Re: 12,5 Ghz oscillator

Yahoo group: 24GHzHam
Date: 2007-11-24 09:52:26 UTC
From: Gary VK2KYP
Topic: 210 Message: 216

Hi Piet,
Great result.

If this oscillator module has the same 4 wire interface as my example. I suugest the 4 wires are.

A GND
B data
C Clk
D enable

I have not had time to power mine up, I hope I get the same results as you. I think we need a micro controller such as a microchip PIC or Atmel AVR to control the module

73 Gary

--- In 24GHzHam@yahoogroups.com, "pa0vtw" <pa0vtw@...> wrote:
>
> hi Gary
>
> yes it correspond with this device
>
> my 15 v first was a little to high
>
> on J1 15 pins connector
>
> pin 8 ground
> pin 7 12v x tal oscillator
> pin 15 8v
> and my yig is locking on 12,00020
> it works fine
> and very stable
>
> now we are looking for the other
> pins on the connector
>

217. 12,5 Ghz oscillator

Yahoo group: 24GHzHam
Date: 2007-11-24 10:13:07 UTC
From: pa0vtw
Topic: 210 Message: 217

Hi Gary

i don`t know that we have the same module
my module has a 15 pin connector
i put a picture on my album
then you see my module,it has a
pic prosessor in it the number is 16c72a

73`Piet

218. Re: 12,5 Ghz oscillator

Yahoo group: 24GHzHam
Date: 2007-11-24 10:39:30 UTC
From: Gary VK2KYP
Topic: 210 Message: 218

Hi Piet,
My oscillator is a

Microsource SNP101341001
10.575-13.35 GHz

I think this is the same as yours.

regards Gary

--- In 24GHzHam@yahoogroups.com, "pa0vtw" <pa0vtw@...> wrote:
>
> Hi Gary
>
> i don`t know that we have the same module
> my module has a 15 pin connector
> i put a picture on my album
> then you see my module,it has a
> pic prosessor in it the number is 16c72a
>
>
> 73`Piet
>

219. New file uploaded to 24GHzHam

Yahoo group: 24GHzHam
Date: 2007-11-30 00:28:36 UTC
From: 24GHzHam@yahoogroups.com
Topic: 31 Message: 219

Hello,

This email message is a notification to let you know that
a file has been uploaded to the Files area of the 24GHzHam
group.

File : /Single Loop 10-13 GHz Synth. Control & DC .pdf
Uploaded by : vk2kyp <gbeech@...>
Description : microsource Single Loop 10-13 GHz Synth. Control & DC

You can access this file at the URL:
http://groups.yahoo.com/group/24GHzHam/files/Single%20Loop%2010-13%20GHz%20Synth.%20Control%20%26%20DC%20.pdf

To learn more about file sharing for your group, please visit:
http://help.yahoo.com/help/us/groups/files

Regards,

vk2kyp <gbeech@...>

220. Celeritek unit

Yahoo group: 24GHzHam
Date: 2007-12-04 19:07:43 UTC
From: Zack Widup
Topic: 220 Message: 220

I forget if I asked this before. There is someone on eBay selling "Celeritek Microwave Transceiver GaAs CTR-990126". Does anyone know what these really are? They appear to have two WR-42 ports on them.

If they're worth spending $50 on I might pick one up.

73, Zack W9SZ

221. RE: [24GHzHam] Celeritek unit

Yahoo group: 24GHzHam
Date: 2007-12-04 19:32:07 UTC
From: Randy Bynum
Topic: 220 Message: 221

Zack,

They are most likely 22, 23 or 24 GHz converters from around 2 GHz. No way for me to know from the part number. The pin outs of course need to be known and I may have that information around here somewhere. For $50.00 I'd say they are worth it. I've seen them listed on eBay but I have a couple of them already so I figured I don't need any more.

Good luck,

Randy Bynum, NR6CA
Reno, NV DM09cj
Soda Springs, CA CM99th
160 meters to 80 GHz plus laser
http://www.nr6ca.org

From: 24GHzHam@yahoogroups.com [mailto:24GHzHam@yahoogroups.com] On Behalf Of Zack Widup
Sent: Tuesday, December 04, 2007 11:08 AM
To: 24GHzHam@yahoogroups.com
Subject: [24GHzHam] Celeritek unit

I forget if I asked this before. There is someone on eBay selling "Celeritek Microwave Transceiver GaAs CTR-990126". Does anyone know what these really are? They appear to have two WR-42 ports on them.

If they're worth spending $50 on I might pick one up.

222. Re: [24GHzHam] New file uploaded to 24GHzHam

Yahoo group: 24GHzHam
Date: 2007-12-29 21:53:10 UTC
From: Joseph Ruggieri
Topic: 31 Message: 222

test

----- Original Message -----
From: 24GHzHam@yahoogroups.com
To: 24GHzHam@yahoogroups.com
Sent: Thursday, November 29, 2007 7:28 PM
Subject: [24GHzHam] New file uploaded to 24GHzHam

Hello,

This email message is a notification to let you know that
a file has been uploaded to the Files area of the 24GHzHam
group.

File : /Single Loop 10-13 GHz Synth. Control & DC .pdf
Uploaded by : vk2kyp <gbeech@....au>
Description : microsource Single Loop 10-13 GHz Synth. Control & DC

You can access this file at the URL:
http://groups.yahoo.com/group/24GHzHam/files/Single%20Loop%2010-13%20GHz%20Synth.%20Control%20%26%20DC%20.pdf

To learn more about file sharing for your group, please visit:
http://help.yahoo.com/help/us/groups/files

Regards,

vk2kyp <gbeech@mail.fairfax.com.au>

No virus found in this incoming message.
Checked by AVG Free Edition.
Version: 7.5.503 / Virus Database: 269.16.10/1159 - Release Date: 11/29/2007 11:10 AM

223. Several measurements

Yahoo group: 24GHzHam
Date: 2008-01-12 21:02:22 UTC
From: Arie Dogterom
Topic: 223 Message: 223

Recently I obtained the SDH set consisting of the main unit, the LO (CTI at 12575,5 MHz) and the power supply from 48 Volts.
I have done some measurements using an external LO in order to check the behaviour of the mixer etc for different LO AND/OR IF frequencies.
For the RX part it becomes clear that for a >20 db image suppression the IF shall lie between 100 and 450 MHz and the LO can be below or above the input freqwuency.

I also measured the filter at the PA input. As received it had a very low loss of about 1 dB around. 25,75 GHz I then tuned it to around 24100 MHz and an insertion loss of 2 dB resulted. The bandwidth remained in the order of 400 MHz. It is clear that a 432 MHz IF will be the best choice and the tx filter can easily be tuned in such a way that the output frequency (24048 or 24192- why are USA amateurs using the secondary allocation while we have an exclusive allocation?-) lies near the filter edge.

I measured the PA. Pity that my unit only had a single chip output. But 1 Watt can be reached with 3 dB gain compression.

It took me quite a while to find out that the SMPS only wouuld work if the LO as well as the main unit were connected. By which method can that behavior be changed?

Finally I mesured an output level of 11,5 dBm at 12575,5 MHz from the CTI LO. Less than some other people have measured.

I have uploaded cuurves of my mesurements to the files section as SDH.DOC

73 de Arie, PA0EZ

224. New file uploaded to 24GHzHam

Yahoo group: 24GHzHam
Date: 2008-01-12 21:03:26 UTC
From: 24GHzHam@yahoogroups.com
Topic: 31 Message: 224

```
Hello,

This email message is a notification to let you know that
a file has been uploaded to the Files area of the 24GHzHam
group.

File : /sdhmeting.doc
Uploaded by : pa0ez <pa0ez@...>
Description : Measuurement curves

You can access this file at the URL:
http://groups.yahoo.com/group/24GHzHam/files/sdhmeting.doc

To learn more about file sharing for your group, please visit:
http://help.yahoo.com/l/us/yahoo/groups/original/members/web/index.htmlfiles

Regards,

pa0ez <pa0ez@...>
```

225. Re: [24GHzHam] Several measurements

Yahoo group: 24GHzHam
Date: 2008-01-13 12:18:17 UTC
From: F1URI David
Topic: 223 Message: 225

Hello Arie,
thanks a lot for sharing your measurements.
I recently discover this group because it takes me sometime to discover that the Nortel and TRW parts was in fact better known as SDH !
I own severals SDH units and I plan to modify them for my new 24Ghz SSB transverter. I will use 432 or 1296 as IF I think.
The first step is to tune the filter, I will do it in the coming weeks.

73
David - F1URI

Arie Dogterom wrote:
> Recently I obtained the SDH set consisting of the main unit, the LO
> (CTI at 12575,5 MHz) and the power supply from 48 Volts.
> I have done some measurements using an external LO in order to check
> the behaviour of the mixer etc for different LO AND/OR IF frequencies.
> For the RX part it becomes clear that for a >20 db image suppression
> the IF shall lie between 100 and 450 MHz and the LO can be below or
> above the input freqwuency.
>
> I also measured the filter at the PA input. As received it had a very
> low loss of about 1 dB around. 25,75 GHz I then tuned it to around
> 24100 MHz and an insertion loss of 2 dB resulted. The bandwidth
> remained in the order of 400 MHz. It is clear that a 432 MHz IF will
> be the best choice and the tx filter can easily be tuned in such a
> way that the output frequency (24048 or 24192- why are USA amateurs
> using the secondary allocation while we have an exclusive allocation?-
>) lies near the filter edge.
>
> I measured the PA. Pity that my unit only had a single chip output.
> But 1 Watt can be reached with 3 dB gain compression.
>
> It took me quite a while to find out that the SMPS only wouuld work
> if the LO as well as the main unit were connected. By which method
> can that behavior be changed?
>
> Finally I mesured an output level of 11,5 dBm at 12575,5 MHz from the
> CTI LO. Less than some other people have measured.
>
> I have uploaded cuurves of my mesurements to the files section as
> SDH.DOC
>
> 73 de Arie, PA0EZ
>
>

>

226. RE: [24GHzHam] Several measurements

Yahoo group: 24GHzHam
Date: 2008-01-13 13:04:13 UTC
From: Steen Gulstorff
Topic: 223 Message: 226

Hi Arie

Thanks for the report .

I can add that i have measured the NF to 3dB and gain 36dB using 144Mhz IF

The SMPS has a "PLL lock" feeedback from the the LO which enables the 7.35V.

The Lo outputs +5 V on the white cable.

I have used a 100k resistor from +12 to this input.

Vy73 de OZ2TG, Steen

From: 24GHzHam@yahoogroups.com [mailto:24GHzHam@yahoogroups.com] On Behalf
Of Arie Dogterom
Sent: 12. januar 2008 22:02
To: 24GHzHam@yahoogroups.com
Subject: [24GHzHam] Several measurements

Recently I obtained the SDH set consisting of the main unit, the LO
(CTI at 12575,5 MHz) and the power supply from 48 Volts.
I have done some measurements using an external LO in order to check
the behaviour of the mixer etc for different LO AND/OR IF frequencies.
For the RX part it becomes clear that for a >20 db image suppression
the IF shall lie between 100 and 450 MHz and the LO can be below or
above the input freqwuency.

I also measured the filter at the PA input. As received it had a very
low loss of about 1 dB around. 25,75 GHz I then tuned it to around
24100 MHz and an insertion loss of 2 dB resulted. The bandwidth
remained in the order of 400 MHz. It is clear that a 432 MHz IF will
be the best choice and the tx filter can easily be tuned in such a
way that the output frequency (24048 or 24192- why are USA amateurs
using the secondary allocation while we have an exclusive allocation?-
) lies near the filter edge.

I measured the PA. Pity that my unit only had a single chip output.
But 1 Watt can be reached with 3 dB gain compression.

It took me quite a while to find out that the SMPS only wouuld work
if the LO as well as the main unit were connected. By which method
can that behavior be changed?

Finally I mesured an output level of 11,5 dBm at 12575,5 MHz from the
CTI LO. Less than some other people have measured.

I have uploaded cuurves of my mesurements to the files section as SDH.DOC

73 de Arie, PA0EZ

227. Re: [24GHzHam] Several measurements

Yahoo group: 24GHzHam
Date: 2008-01-13 15:13:43 UTC
From: Arie Dogterom
Topic: 223 Message: 227

David,
I strongly advice against using a 1296 MHz if. The image suppresion of the RX is only sufficient (from a noise figure point of view) below 500 MHz.(Probably due to the 90 degree hybrid used in the if). Above 500 the effective NF will move up to 3 dB above the below 500 MHz value. The latter seems to be around 3 dB (as OZ2TG has measured).
73
Arie

----- Original Message -----
From: "F1URI David" <f1uri@...>
To: <24GHzHam@yahoogroups.com>
Sent: Sunday, January 13, 2008 1:18 PM
Subject: Re: [24GHzHam] Several measurements

> Hello Arie,
> thanks a lot for sharing your measurements.
> I recently discover this group because it takes me sometime to discover
> that the Nortel and TRW parts was in fact better known as SDH !
> I own severals SDH units and I plan to modify them for my new 24Ghz SSB
> transverter. I will use 432 or 1296 as IF I think.
> The first step is to tune the filter, I will do it in the coming weeks.
>
> 73
> David - F1URI
>
>
> Arie Dogterom wrote:
>> Recently I obtained the SDH set consisting of the main unit, the LO
>> (CTI at 12575,5 MHz) and the power supply from 48 Volts.
>> I have done some measurements using an external LO in order to check
>> the behaviour of the mixer etc for different LO AND/OR IF frequencies.
>> For the RX part it becomes clear that for a >20 db image suppression
>> the IF shall lie between 100 and 450 MHz and the LO can be below or
>> above the input freqwuency.
>>
>> I also measured the filter at the PA input. As received it had a very
>> low loss of about 1 dB around. 25,75 GHz I then tuned it to around
>> 24100 MHz and an insertion loss of 2 dB resulted. The bandwidth
>> remained in the order of 400 MHz. It is clear that a 432 MHz IF will
>> be the best choice and the tx filter can easily be tuned in such a
>> way that the output frequency (24048 or 24192- why are USA amateurs
>> using the secondary allocation while we have an exclusive allocation?-
>>) lies near the filter edge.
>>

>> I measured the PA. Pity that my unit only had a single chip output.
>> But 1 Watt can be reached with 3 dB gain compression.
>>
>> It took me quite a while to find out that the SMPS only wouuld work
>> if the LO as well as the main unit were connected. By which method
>> can that behavior be changed?
>>
>> Finally I mesured an output level of 11,5 dBm at 12575,5 MHz from the
>> CTI LO. Less than some other people have measured.
>>
>> I have uploaded cuurves of my mesurements to the files section as
>> SDH.DOC
>>
>> 73 de Arie, PA0EZ
>>
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> Yahoo! Groups Links
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228. Looking for OCXO for LO reference

Yahoo group: 24GHzHam
Date: 2008-02-06 21:46:28 UTC
From: Frank WB6CWN
Topic: 228 Message: 228

The 24Ghz Endwave transverter group has been quiet for awhile.
Does anyone have some success to share? Post pictures if you have them.

My unit is almost ready to go. Everything is constructed except for
the LO reference for the DRO I am using. For this project I need a
very good OCXO. The following frequencies are preferred: 180, 72, 54,
or 36MHz. This will allow me to use the same reference for 10 and 24Ghz.

For just 24GHz I can use: 110, 108 99, 90 88, 72, 66, 55, 54, 45, 44,
or 40MHz. PLease check your junkboxes for spares.

Thanks,
Frank WB6CWN

229. RE: [24GHzHam] Looking for OCXO for LO reference

Yahoo group: 24GHzHam
Date: 2008-02-06 21:51:06 UTC
From: Yoshida, Wayne
Topic: 228 Message: 229

Funny you should say that. As my X-band radio is (finally) done (tests needed on TX), I started to look at the group postings. I like Tony KC6QHP's layout, since is uses "easier to get" components. I am reading thru the history and will begin my project -- soon!

Wayne KH6WZ

From: 24GHzHam@yahoogroups.com [mailto:24GHzHam@...m] On Behalf Of Frank WB6CWN
Sent: Wednesday, February 06, 2008 1:46 PM
To: 24GHzHam@yahoogroups.com
Subject: [24GHzHam] Looking for OCXO for LO reference

The 24Ghz Endwave transverter group has been quiet for awhile.
Does anyone have some success to share? Post pictures if you have them.

My unit is almost ready to go. Everything is constructed except for the LO reference for the DRO I am using. For this project I need a very good OCXO. The following frequencies are preferred: 180, 72, 54, or 36MHz. This will allow me to use the same reference for 10 and 24Ghz.

For just 24GHz I can use: 110, 108 99, 90 88, 72, 66, 55, 54, 45, 44, or 40MHz. PLease check your junkboxes for spares.

Thanks,
Frank WB6CWN

230. My Status with SDH

Yahoo group: 24GHzHam
Date: 2008-02-10 04:04:06 UTC
From: w7glf
Topic: 230 Message: 230

Thanks to Ernie (W7LHL) and Mike (KD7TS) I have had the pleasure of working both rain and snow scatter out my back window from the house. Neither destination is a direct shot - Ernie is about 46 miles and Mike is about 22 miles. Signals are quite strong when weather is right.

Mike and Ernie have been using a program called Spectrum Lab to track propagation daily between them and Larry (W7SZ) who is about 147 miles away. Spectrum Lab is a souped up Spectran with lots of neat features. I have not heard Larry yet but it is a goal to hear him someday. Gives me something to do in the wet PNW.

My next goal is to integrate the waveguide relay in the unit.

Finally I posted this question quite a while ago but never had a response.

Does anyone know if the cover over the RF driver circuitry can be removed without taking out the 4 forbidden screws? My friend Eric has an SDH whose PA and Rx works fine but due to extremely low RF to the filter input he cannot get more than microwatts out even after the PA. I suspect if we were simply to bypass driver stage we would see more output but that requires pulling the cover off.

231. Re: [24GHzHam] My Status with SDH

Yahoo group: 24GHzHam
Date: 2008-02-10 06:29:36 UTC
From: Joseph Ruggieri
Topic: 230 Message: 231

The failure mode of these modules that Eric is having appears to be the common fail mode.
I have had two good working units fail both after 3-4 months each operation on my 24GHz beacon.
The failure appears to be either the up-conversion mixer or the buffer amplifier ahead of the filter port.
The PA sections still work great as do the complete receiver sections.
I am on my 3 module in the beacon waiting to see how long it will last.
It might become necessary to bypass the internal Xmit mixer using an external mixer.

For the question of removing the RF covers the answer is yes as long as you no remove the 4 screws that hold the substrate to the base.

Joe KI4NPV

----- Original Message -----
From: w7glf
To: 24GHzHam@yahoogroups.com
Sent: Saturday, February 09, 2008 11:04 PM
Subject: [24GHzHam] My Status with SDH

Thanks to Ernie (W7LHL) and Mike (KD7TS) I have had the pleasure of
working both rain and snow scatter out my back window from the house.
Neither destination is a direct shot - Ernie is about 46 miles and
Mike is about 22 miles. Signals are quite strong when weather is right.

Mike and Ernie have been using a program called Spectrum Lab to track
propagation daily between them and Larry (W7SZ) who is about 147 miles
away. Spectrum Lab is a souped up Spectran with lots of neat
features. I have not heard Larry yet but it is a goal to hear him
someday. Gives me something to do in the wet PNW.

My next goal is to integrate the waveguide relay in the unit.

Finally I posted this question quite a while ago but never had a
response.

Does anyone know if the cover over the RF driver circuitry can be
removed without taking out the 4 forbidden screws? My friend Eric has
an SDH whose PA and Rx works fine but due to extremely low RF to the
filter input he cannot get more than microwatts out even after the PA.
I suspect if we were simply to bypass driver stage we would see more
output but that requires pulling the cover off.

No virus found in this incoming message.
Checked by AVG Free Edition.

Version: 7.5.516 / Virus Database: 269.20.0/1268 - Release Date: 2/9/2008 11:54 AM

232. Re: My Status with SDH

Yahoo group: 24GHzHam
Date: 2008-02-10 17:22:29 UTC
From: w7glf
Topic: 230 Message: 232

Thanks Joe! I guess this is an indication I should not push the output power. I will throttle down the IF drive and keep my fingers crossed :).

--- In 24GHzHam@yahoogroups.com, "Joseph Ruggieri" <jruggieri3@...> wrote:
>
> The failure mode of these modules that Eric is having appears to be the common fail mode.
> I have had two good working units fail both after 3-4 months each operation on my 24GHz beacon.
> The failure appears to be either the up-conversion mixer or the buffer amplifier ahead of the filter port.
> The PA sections still work great as do the complete receiver sections.
> I am on my 3 module in the beacon waiting to see how long it will last.
> It might become necessary to bypass the internal Xmit mixer using an external mixer.
>
> For the question of removing the RF covers the answer is yes as long as you no remove the 4 screws that hold the substrate to the base.
>
> Joe KI4NPV
>

233. Re: [24GHzHam] My Status with SDH

Yahoo group: 24GHzHam
Date: 2008-02-11 01:01:01 UTC
From: Jeffrey Pawlan
Topic: 230 Message: 233

Dear Joe,

Two of your units failing in normal use and others
also experiencing failures? What is your educated
guess as to the cause of the failures (not which
components failed)? Do you think the drive level was a
factor, or were any of the DC supply voltages perhaps
incorrect? Or was there insufficient heatsinking? Or
just poor design?
I ask because I wonder if there is anything we can
do to minimize the failures.

I do know that Endwave did go though a period of time
several years ago when their customers were returning
defective product in very large numbers, but I have no
information about which products.

73,

Jeffrey Pawlan WA6KBL

Never miss a thing. Make Yahoo your home page.
http://www.yahoo.com/r/hs

234. Re: [24GHzHam] My Status with SDH

Yahoo group: 24GHzHam
Date: 2008-02-11 02:06:13 UTC
From: Joseph Ruggieri
Topic: 230 Message: 234

Hello Jeffrey and others,

First I am surprised to see the units already on the surplus market so soon.
Only a few years ago I purchased all the spare parts left over at Endwave
that were used for these modules.
This was prior to the transfer to TRW a believe.

I do not believe that the failures are caused by external stimulus since the
failure area is isolated from any ports.
Also the more likely failure would be the 1W output devices if excessive
heat were the problem but both failed modules
had full functioning PA sections from the filer output port to the PA output
port.
Nothing unusual about the drive levels. I run the LO at 10dBm which is
plenty and run the output to the P1 power.
I don't use the receiver section at all in the beacon and they still operate
fine.
I use a Macom PLO operating at 12GHz for the LO. I then take a sample of the
cavity on the PLO which is operating
at 2GHz and divide it down to 200MHz and use that for the IF making the
beacon frequency 24.200GHz which is GPS locked.

I am guessing that the failure is time/temperature related, metal thinning
on one of the chips or bad via on the PCB.
If I had to guess without opening it up I would guess the image reject mixer
or buffer amp.
Another of the units was received defective. I turned out to have a bad via
from the power supply to the PA section. Had
to jumper around this one.

I have not had time to do a failure analysis on the two beacon failures but
will get to this shortly.
Regards,

Joe KI4NPV

----- Original Message -----
From: "Jeffrey Pawlan" <jpawlan@...>
To: <24GHzHam@yahoogroups.com>; <jruggieri3@...>
Sent: Sunday, February 10, 2008 8:01 PM
Subject: Re: [24GHzHam] My Status with SDH

> Dear Joe,
>
> Two of your units failing in normal use and others
> also experiencing failures? What is your educated
> guess as to the cause of the failures (not which

> components failed)? Do you think the drive level was a
> factor, or were any of the DC supply voltages perhaps
> incorrect? Or was there insufficient heatsinking? Or
> just poor design?
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> do to minimize the failures.
>
> I do know that Endwave did go though a period of time
> several years ago when their customers were returning
> defective product in very large numbers, but I have no
> information about which products.
>
> 73,
>
> Jeffrey Pawlan WA6KBL
>
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> _____
> Never miss a thing. Make Yahoo your home page.
> http://www.yahoo.com/r/hs
>
>
> --
> No virus found in this incoming message.
> Checked by AVG Free Edition.
> Version: 7.5.516 / Virus Database: 269.20.2/1270 - Release Date: 2/10/2008
> 12:21 PM
>
>

235. Re: My Status with SDH

Yahoo group: 24GHzHam
Date: 2008-03-07 21:56:28 UTC
From: ki4npv
Topic: 230 Message: 235

Hello Jeffrey and all concerned.

I had a third failure that was consistent with the first two.
All three of the failures has visually blown ALH216 MMIC amplifier.
The is the MMIC after the TX mixer who's output drives the LO filter
input port.

All 6 of the MMICs in these units are in their own OP-Amp servo loop.
They force a known drain supply voltage and meter the drain current
while adjusting the GaAs fet gate voltage until the ID is achieved.

I am guessing the failure is application unique.
Since this is in a beacon application I key the supply voltage using
the same P-mos power fet that I use in a transverter application.
It would appear that the servo amplifier loop time constant for this
amplifier that is failing has a problem with my application.
None of the other 5 MMIC amplifier in the 3 failed units were
affected by the constant supply keying.

Today I modified the keying method to PIN diode control of the LO
input to the board.
This will cost more power consumption and heat but should fix the
problem.

I don't think that normal PTT keying using phone should be a problem
but CW while enableing the amplifier supply will.

Joe KI4NPV

-- In 24GHzHam@yahoogroups.com, Jeffrey Pawlan <jpawlan@...> wrote:
>
> Dear Joe,
>
> Two of your units failing in normal use and others
> also experiencing failures? What is your educated
> guess as to the cause of the failures (not which
> components failed)? Do you think the drive level was a
> factor, or were any of the DC supply voltages perhaps
> incorrect? Or was there insufficient heatsinking? Or
> just poor design?
> I ask because I wonder if there is anything we can
> do to minimize the failures.
>
> I do know that Endwave did go though a period of time
> several years ago when their customers were returning
> defective product in very large numbers, but I have no
> information about which products.

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> 73,
>
> Jeffrey Pawlan WA6KBL
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>
>
>

> Never miss a thing. Make Yahoo your home page.
> http://www.yahoo.com/r/hs
>

236. Re: SDH failure mode

Yahoo group: 24GHzHam
Date: 2008-03-08 04:56:40 UTC
From: Jeffrey Pawlan
Topic: 230 Message: 236

Dear Joe,

I have been thinking about your post for several hours now and I am not certain that I fully understand the cause and the solution. If all the mmics have the same bias setting loops, why is it that only this particular one fails in each unit? Also I want to make sure that I understand what you were doing with your beacon. Were you keying the DC power to the transmitter on and off with every dot and dash or were you leaving the transmitter on for the duration of the entire message? You wrote that you created CW by using an RF PIN switch. Do you have any sense yet whether this will prevent the failures or is it too soon to know? For transceiver use, is it really safe to use the FET to bias the transmit power on and off or would it be safer to leave the transmit power on all the time? I imagine the unit will become hot unless the heatsink is very large.

Finally, is that burned mmic replaceable by you or do those SDH units become expensive paperweights?

73,

Jeffrey Pawlan WA6KBL

237. Re: [24GHzHam] Re: SDH failure mode

Yahoo group: 24GHzHam
Date: 2008-03-08 05:34:31 UTC
From: Joseph Ruggieri
Topic: 230 Message: 237

Hi Jeffrey,

Yes, each MMIC amplifier has it's own loop amplifier. I doubt they are exactly the same as far as loop time constant.
I suspect that is the problem. The continuous dots and dashes that one loop to go out of compliance range.
When these devices blow the entire trace on the MMIC from the bond wire pad vaporizes.
I don't think the loop itself has failed and if I could replace the MMIC it would probably work again in a static power condition.
Since I don't have complete schematics of all the loop amplifier circuits I can not evaluate the loop time constant of each circuit.
It could be as simple as them leaving a capacitor out or using the wrong value.

As for my original keying, I turned on a power fet which supplied power only to the TX MMIC devices with each dash and dot.
Depending on the actual code sequence this may have run the loop out of control if the loop time constant was incorrect.

My new approach it to leave the TX powered 100% of the time (24-7-52 week a year) and key the LO power into the board.
Since I have good heat-sinking I do believe this will solve the problem
I also have two transverters that I designed using these modules and they operate flawlessly.
Here the TX power enable fet is turned on only when the mic is keyed using proper delays.
I think I have photos of one transverter on this site.

I also have a 10.4GHz beacon using one of DEMI 3W PA kits. This has been up for over a year using a FET to key the PA power for each dot and dash
and never missed a beat. The DEMI amplifier uses fixed biasing so no loop to cause problems.

The bad MMIC could be replaced in these units later if necessary.
They still have application with the bad MMIC since the receiver it totally fine and so is the two stage PA section.
The PA section could be used with a frequency doubler (like those sold on Ebay) for a 1W beacon application.
I will probably use one bad unit for a monitor receiver for 24.2 to make sure my beacon is operating.
I have a monitor receiver for all my other tower mounted bands form 902 through 10.368 using a single log periodic antenna. I find this very helpful.

Regards,

Joe
----- Original Message -----
From: Jeffrey Pawlan
To: 24GHzHam@yahoogroups.com

Sent: Friday, March 07, 2008 11:56 PM
Subject: [24GHzHam] Re: SDH failure mode

Dear Joe,

I have been thinking about your post for several hours now and I am not certain that I fully understand the cause and the solution. If all the mmics have the same bias setting loops, why is it that only this particular one fails in each unit? Also I want to make sure that I understand what you were doing with your beacon. Were you keying the DC power to the transmitter on and off with every dot and dash or were you leaving the transmitter on for the duration of the entire message? You wrote that you created CW by using an RF PIN switch. Do you have any sense yet whether this will prevent the failures or is it too soon to know? For transceiver use, is it really safe to use the FET to bias the transmit power on and off or would it be safer to leave the transmit power on all the time? I imagine the unit will become hot unless the heatsink is very large.

Finally, is that burned mmic replaceable by you or do those SDH units become expensive paperweights?

73,

Jeffrey Pawlan WA6KBL

No virus found in this incoming message.
Checked by AVG Free Edition.
Version: 7.5.516 / Virus Database: 269.21.6/1317 - Release Date: 3/7/2008 8:15 AM

238. Re: [24GHzHam] Re: SDH failure mode

Yahoo group: 24GHzHam
Date: 2008-03-09 02:12:18 UTC
From: kb7dqh@donobi.net
Topic: 230 Message: 238

I am curious what the mixer output level is, and if removing the MMIC and bridging the mixer output to the waveguide port would still produce a "useable" drive level to the 1W PA... The Unit I got was "pre-failed" :-)

ERic
KB7DQH
>

239. Re: [24GHzHam] Re: SDH failure mode

Yahoo group: 24GHzHam
Date: 2008-03-09 05:23:02 UTC
From: Joseph Ruggieri
Topic: 230 Message: 239

Hi Eric,

The typical output from the MMIC that is between the mixer and the filter input port is typically 17dBm with full IF drive.
I don't have the MMIC data sheet in front of me but as I recall the gain of the alh216 is 20dB or more.
The filter will also have an insertion loss of about 3.5dB.
Also, the output of the mixer is wire bonded directly to the 216 input. The two chips almost touch each other.
It would be easier to change the 216 than to jump around the device.
It takes +5dBm on the filter output port (PA input port) to get 1W out of these units in general.

I believe there is someone on this reflector that has or can get full schematics for these units.
This would make it possible to find and correct the root cause of this failure.
Trouble shooting without schematics is very difficult with these multi-layer boards.
At this time I am still fairly sure that the cause is an unstable bias control loop circuit associated with the ALH216.

Joe KI4NPV

----- Original Message -----
From: kb7dqh@...
To: 24GHzHam@yahoogroups.com
Cc: 24ghzham@yahoogroups.com
Sent: Saturday, March 08, 2008 9:12 PM
Subject: Re: [24GHzHam] Re: SDH failure mode

I am curious what the mixer output level is, and if removing the MMIC and
bridging the mixer output to the waveguide port would still produce a
"useable" drive level to the 1W PA... The Unit I got was "pre-failed" :-)

ERic
KB7DQH
>

No virus found in this incoming message.
Checked by AVG.
Version: 7.5.518 / Virus Database: 269.21.7/1319 - Release Date: 3/8/2008 10:14 AM

240. Re: SDH failure mode - FSK keying ?

Yahoo group: 24GHzHam
Date: 2008-03-11 12:24:49 UTC
From: Uffe Lindhardt
Topic: 230 Message: 240

A lessoned learned from the OZ7IGY beacons is that it is much better to apply FSK keying to the LO if possible. Amplitude keying stresses the amplifier chips and leads to a shorter lifespan.

73 Uffe PA5DD

--- In 24GHzHam@yahoogroups.com, "Joseph Ruggieri" <jruggieri3@...> wrote:
>
> Hi Jeffrey,
>
> Yes, each MMIC amplifier has it's own loop amplifier. I doubt they are exactly the same as far as loop time constant.
> I suspect that is the problem. The continuous dots and dashes that one loop to go out of compliance range.
> When these devices blow the entire trace on the MMIC from the bond wire pad vaporizes.
> I don't think the loop itself has failed and if I could replace the MMIC it would probably work again in a static power condition.
> Since I don't have complete schematics of all the loop amplifier circuits I can not evaluate the loop time constant of each circuit.
> It could be as simple as them leaving a capacitor out or using the wrong value.
>
> As for my original keying, I turned on a power fet which supplied power only to the TX MMIC devices with each dash and dot.
> Depending on the actual code sequence this may have run the loop out of control if the loop time constant was incorrect.
>
> My new approach it to leave the TX powered 100% of the time (24-7-52 week a year) and key the LO power into the board.
> Since I have good heat-sinking I do believe this will solve the problem
> I also have two transverters that I designed using these modules and they operate flawlessly.
> Here the TX power enable fet is turned on only when the mic is keyed using proper delays.
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> I also have a 10.4GHz beacon using one of DEMI 3W PA kits. This has been up for over a year using a FET to key the PA power for each dot and dash
> and never missed a beat. The DEMI amplifier uses fixed biasing so no loop to cause problems.
>
> The bad MMIC could be replaced in these units later if necessary.
> They still have application with the bad MMIC since the receiver it

totally fine and so is the two stage PA section.
> The PA section could be used with a frequency doubler (like those
sold on Ebay) for a 1W beacon application.
> I will probably use one bad unit for a monitor receiver for 24.2 to
make sure my beacon is operating.
> I have a monitor receiver for all my other tower mounted bands form
902 through 10.368 using a single log periodic antenna. I find this
very helpful.
>
> Regards,
>
> Joe
> ----- Original Message -----
> From: Jeffrey Pawlan
> To: 24GHzHam@yahoogroups.com
> Sent: Friday, March 07, 2008 11:56 PM
> Subject: [24GHzHam] Re: SDH failure mode
>
>
> Dear Joe,
>
> I have been thinking about your post for several hours now and I am
> not certain that I fully understand the cause and the solution. If all
> the mmics have the same bias setting loops, why is it that only this
> particular one fails in each unit? Also I want to make sure that I
> understand what you were doing with your beacon. Were you keying the
> DC power to the transmitter on and off with every dot and dash or were
> you leaving the transmitter on for the duration of the entire message?
> You wrote that you created CW by using an RF PIN switch. Do you
> have any sense yet whether this will prevent the failures or is it too
> soon to know? For transceiver use, is it really safe to use the FET
> to bias the transmit power on and off or would it be safer to leave
> the transmit power on all the time? I imagine the unit will become hot
> unless the heatsink is very large.
>
> Finally, is that burned mmic replaceable by you or do those SDH
> units become expensive paperweights?
>
> 73,
>
> Jeffrey Pawlan WA6KBL
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>
> No virus found in this incoming message.
> Checked by AVG Free Edition.
> Version: 7.5.516 / Virus Database: 269.21.6/1317 - Release Date:
3/7/2008 8:15 AM
>

241. Re: [24GHzHam] Re: SDH failure mode - FSK keying ?

Yahoo group: 24GHzHam
Date: 2008-03-11 13:25:53 UTC
From: Michael Aust
Topic: 230 Message: 241

I agree with Uffe

Uffe Lindhardt <pa5dd@...> wrote:
A lessoned learned from the OZ7IGY beacons is that it is much better to apply FSK keying to the LO if possible. Amplitude keying stresses the amplifier chips and leads to a shorter lifespan.

73 Uffe PA5DD

--- In 24GHzHam@yahoogroups.com, "Joseph Ruggieri" <jruggieri3@...> wrote:
>
> Hi Jeffrey,
>
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> I suspect that is the problem. The continuous dots and dashes that one loop to go out of compliance range.
> When these devices blow the entire trace on the MMIC from the bond wire pad vaporizes.
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> My new approach it to leave the TX powered 100% of the time (24-7-52 week a year) and key the LO power into the board.
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>
> I also have a 10.4GHz beacon using one of DEMI 3W PA kits. This has been up for over a year using a FET to key the PA power for each dot and dash
> and never missed a beat. The DEMI amplifier uses fixed biasing so no loop to cause problems.
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> The bad MMIC could be replaced in these units later if necessary.
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> I have a monitor receiver for all my other tower mounted bands form 902 through 10.368 using a single log periodic antenna. I find this very helpful.
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> Regards,
>
> Joe
> ----- Original Message -----
> From: Jeffrey Pawlan
> To: 24GHzHam@yahoogroups.com
> Sent: Friday, March 07, 2008 11:56 PM
> Subject: [24GHzHam] Re: SDH failure mode
>
>
> Dear Joe,
>
> I have been thinking about your post for several hours now and I am
> not certain that I fully understand the cause and the solution. If all
> the mmics have the same bias setting loops, why is it that only this
> particular one fails in each unit? Also I want to make sure that I
> understand what you were doing with your beacon. Were you keying the
> DC power to the transmitter on and off with every dot and dash or were
> you leaving the transmitter on for the duration of the entire message?
> You wrote that you created CW by using an RF PIN switch. Do you
> have any sense yet whether this will prevent the failures or is it too
> soon to know? For transceiver use, is it really safe to use the FET
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> the transmit power on all the time? I imagine the unit will become hot
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> units become expensive paperweights?
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> 73,
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> Jeffrey Pawlan WA6KBL
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>
> No virus found in this incoming message.
> Checked by AVG Free Edition.
> Version: 7.5.516 / Virus Database: 269.21.6/1317 - Release Date:
3/7/2008 8:15 AM
>

242. SDH failure mode identified!

Yahoo group: 24GHzHam
Date: 2008-03-12 03:24:18 UTC
From: ki4npv
Topic: 230 Message: 242

Hello again Jeffrey and others interested.

I spend an hour tonight tracing out the bias loop circuit for the MMIC (ALH216) which has been failing.
First, the loop time constant was the same as for all other devices in the design, 1ms.
The real problem was the operation current of this particular device. The 216s that remaining working are operating at 92ma with a 4v VDD. This one is operating at 220MA and 4V. Since the data sheet specifies the absolute max IDD to be 180ma (tyically 90ma @4v) @ 25 degress C juntion and these boards always running hotter this would lead to the early failures we are seeing.

The integrated bias loops for all the MMIC devices all operate the same. They take the 5.3v from the power regulator and apply it to one side of the current sense resistor for the MMIC. The other end of the sense resistor goes to the VDD pin on the device. The reference for the loop comes from the common pin on the same regulator which sets at 4.0v. This means the sense resistor is always looking for 1.3v across the sense resisor to satisfy the loop.

For the 216s that are not failing they are using two 28 ohm resistors is parallel, 14 ohms, setting the correct operation current of 92ma for IDD.
For the failed 216 they used two 11.8 ohm resistors in parallel, 5.9 ohms making the IDD 1.3/5.9 = 220ma.
The fix is easy, either change both resistors (R53 and R54) to 28 ohms or remove one of the 11.8 ohm reisitors all together. 1.3v/11 ohms = 110ma, close enough.

Have not had time to make the change but will do so in the beacon first and then both transverters.
Comments appreciated before I proceed,

Regards,

Joe KI4NPV
--- In 24GHzHam@yahoogroups.com, "Jeffrey Pawlan" <jpawlan@...> wrote:
>
> Dear Joe,
>
> I have been thinking about your post for several hours now and I am
> not certain that I fully understand the cause and the solution. If all
> the mmics have the same bias setting loops, why is it that only this

> particular one fails in each unit? Also I want to make sure that I
> understand what you were doing with your beacon. Were you keying the
> DC power to the transmitter on and off with every dot and dash or
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> you leaving the transmitter on for the duration of the entire
message?
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> to bias the transmit power on and off or would it be safer to leave
> the transmit power on all the time? I imagine the unit will become
hot
> unless the heatsink is very large.
>
> Finally, is that burned mmic replaceable by you or do those SDH
> units become expensive paperweights?
>
> 73,
>
> Jeffrey Pawlan WA6KBL
>

243. SDH failure mode identified, corrected and tested!

Yahoo group: 24GHzHam
Date: 2008-03-13 02:41:59 UTC
From: ki4npv
Topic: 230 Message: 243

--- In 24GHzHam@yahoogroups.com, "ki4npv" <jruggieri3@...> wrote:

Hello again,

First some more accurate measured voltages.
The + supply voltage actually measures 5.4v and not 5.3.
Also the reference for the failing ALH216 MMIC is slightly different than the others being 4.62 instead of 4.2. This was accomplished by a couple of resistors forming a voltage divider between the 5.4v rail and the 4.2v standard reference. The divider resistors are 1.0K and 1.78K.
In this original bias configuration the sense voltage across the two 11.8 ohm paralled resistors was .78v and the VDD to the MMIC is 4.62v which equals .78/5.9 ohms = 132ma.
This puts the power dissipation for this ALH216 at 132 x 4.62v = 610mw. This is what is causing the device VDD metalization lines to fuse open with time.
The fix was to remove the 1.78k ohm resistor completly which returns the reference for this device to 4.2v and to replace both high side current sense resistors to 27.4 ohms instead of 11.8 ohms.
This does two things, first it sets the VDD back to 4.2v and sets the IDD back to 88ma. The device dissipation is now only 4.2 x 88 =370mw instead of 610mw. This puts this failing device on an even par with the other ALH216 devices on the board.

Now for the test results before and after the modification.
With the original high power bias the conversion gain for the transmitter was 35dB, -5dBm input for 1W output.
After the modification the conversion gain was 34.1db with 1W output.

These resistors can be found on the back side of the board close to the filter input port. They are not under the RF covers!.
When you flip the board over you will see a quad op-amp at this location. It's pin 1 will be marked on the bottom left.
The 1.78k resistor that needs removed is lined up with pin 3 on the op-amp. You will also see 4 large resistors below the op-amp.
The two on the right are the 11.8 ohm that need to be changed to 27.4 ohms.
Let me know if you have any problems with the modification.
Regards,

Joe KI4NPV
> Hello again Jeffrey and others interested.
>
> I spend an hour tonight tracing out the bias loop circuit for the MMIC

> (ALH216) which has been failing.
> First, the loop time constant was the same as for all other devices
> in the design, 1ms.
> The real problem was the operation current of this particular
device.
> The 216s that remaining working are operating at 92ma with a 4v VDD.
> This one is operating at 220MA and 4V. Since the data sheet
specifies
> the absolute max IDD to be 180ma (tyically 90ma @4v) @ 25 degress C
> juntion and these boards always running hotter this would lead to
the
> early failures we are seeing.
>
> The integrated bias loops for all the MMIC devices all operate the
> same. They take the 5.3v from the power regulator and apply it to
one
> side of the current sense resistor for the MMIC. The other end of
the
> sense resistor goes to the VDD pin on the device. The reference for
> the loop comes from the common pin on the same regulator which sets
at
> 4.0v. This means the sense resistor is always looking for 1.3v
across
> the sense resisor to satisfy the loop.
>
> For the 216s that are not failing they are using two 28 ohm
resistors
> is parallel, 14 ohms, setting the correct operation current of 92ma
> for IDD.
> For the failed 216 they used two 11.8 ohm resistors in parallel,
5.9
> ohms making the IDD 1.3/5.9 = 220ma.
> The fix is easy, either change both resistors (R53 and R54) to 28
> ohms or remove one of the 11.8 ohm reisitors all together. 1.3v/11
> ohms = 110ma, close enough.
>
> Have not had time to make the change but will do so in the beacon
> first and then both transverters.
> Comments appreciated before I proceed,
>
> Regards,
>
> Joe KI4NPV

244. Re: SDH failure mode identified!

Yahoo group: 24GHzHam
Date: 2008-03-15 18:11:32 UTC
From: w7glf
Topic: 230 Message: 244

All I can say is great detective work Joe! I am sure glad you are on our side :)... Now I guess before I fire mine up I need to find those pesky resistors.

245. Re: SDH failure mode identified!

Yahoo group: 24GHzHam
Date: 2008-03-15 18:18:33 UTC
From: w7glf
Topic: 230 Message: 245

Found them! There are on the bottom side near the power connector. I have not opened up my working transverter but I have an older unit's control board and it has the 11.8 resistors. Guess its time to disassemble the real transverter and take a peek.

Thanks again!

246. Re: [24GHzHam] Re: SDH failure mode identified!

Yahoo group: 24GHzHam
Date: 2008-03-15 19:20:00 UTC
From: Joseph Ruggieri
Topic: 230 Message: 246

He Ed,

Be sure you totally remove the 1.78K resistor which is in line with pin 3 on the opamp at the same time as you replace the two 11.8 ohm resistors.
Also, some might not be aware that the gold heat spreader on each RF section is .009 inches recessed below the rest of the mounting frame.
You must use a .010 thick silicon heat transfer pad over the gold square section to properly remove the heat from the spreader.
If this pad is not there will be a gap and you will not transfer the heat properly.
Thanks,

Joe

----- Original Message -----
From: w7glf
To: 24GHzHam@yahoogroups.com
Sent: Saturday, March 15, 2008 2:18 PM
Subject: [24GHzHam] Re: SDH failure mode identified!

Found them! There are on the bottom side near the power connector. I have not opened up my working transverter but I have an older unit's control board and it has the 11.8 resistors. Guess its time to disassemble the real transverter and take a peek.

Thanks again!

No virus found in this incoming message.
Checked by AVG.
Version: 7.5.519 / Virus Database: 269.21.7/1329 - Release Date: 3/14/2008 12:33 PM

247. Re: SDH failure mode identified!

Yahoo group: 24GHzHam
Date: 2008-03-16 06:42:33 UTC
From: w7glf
Topic: 230 Message: 247

Joe, Do you know a source for the thermal pad material? I have found several sources but none seem close to .01" thick and mostly precut for specific CPUs. The stuff at Mouser looks too thick (1 mm or .04"). Digikey is .01" but is pricey ($56). Perhaps you know another source.

I had not even thought about that needing a pad although I did notice the depression so I should have.

248. Re: [24GHzHam] Re: SDH thermal pad material

Yahoo group: 24GHzHam
Date: 2008-03-18 01:59:30 UTC
From: Joseph Ruggieri
Topic: 248 Message: 248

Ed and anyone else needing .01 inch thermal pad,

I have 24 rectangular pieces here that are new that I could sell still keeping some for my own projects. They are the sized to use with the standard 250W DC-DC converters.
One piece can be cut to make the two required for one transverter module. They have a peel off backing with adhesive on one side.
Cut to make two pads to fit the gold pads on the bottom. Clean any grease from the gold pads and stick on the thermal pad.

I will make the price very reasonable if anyone needs them, 3.00 each including shipping. Heck with mousers high prices.
This is not one of my normal products. Only making these available for those unable to find this material to complete their transverter.

Joe KI4NPV

----- Original Message -----
From: w7glf
To: 24GHzHam@yahoogroups.com
Sent: Sunday, March 16, 2008 2:42 AM
Subject: [24GHzHam] Re: SDH failure mode identified!

Joe, Do you know a source for the thermal pad material? I have found several sources but none seem close to .01" thick and mostly precut for specific CPUs. The stuff at Mouser looks too thick (1 mm or .04"). Digikey is .01" but is pricey ($56). Perhaps you know another source.

I had not even thought about that needing a pad although I did notice the depression so I should have.

No virus found in this incoming message.
Checked by AVG.
Version: 7.5.519 / Virus Database: 269.21.7/1329 - Release Date: 3/14/2008 12:33 PM

249. RE: [24GHzHam] Re: SDH thermal pad material

Yahoo group: 24GHzHam
Date: 2008-03-18 02:05:59 UTC
From: Yoshida, Wayne
Topic: 248 Message: 249

Could copper shim stock be used instead? Or we can probably harvest this
material from a defunct computer, right?
de KH6WZ
DM03xq

From: 24GHzHam@yahoogroups.com [mailto:24GHzHam@yahoogroups.com] On
Behalf Of Joseph Ruggieri
Sent: Monday, March 17, 2008 7:00 PM
To: 24GHzHam@yahoogroups.com
Subject: Re: [24GHzHam] Re: SDH thermal pad material

Ed and anyone else needing .01 inch thermal pad,

I have 24 rectangular pieces here that are new that I could sell still
keeping some for my own projects. They are the sized to use with the
standard 250W DC-DC converters.
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module. They have a peel off backing with adhesive on one side.
Cut to make two pads to fit the gold pads on the bottom. Clean any
grease from the gold pads and stick on the thermal pad.

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including shipping. Heck with mousers high prices.
This is not one of my normal products. Only making these available for
those unable to find this material to complete their transverter.

Joe KI4NPV

----- Original Message -----
From: w7glf <mailto:w7glf@...>
To: 24GHzHam@yahoogroups.com <mailto:24GHzHam@yahoogroups.com>
Sent: Sunday, March 16, 2008 2:42 AM
Subject: [24GHzHam] Re: SDH failure mode identified!

Joe, Do you know a source for the thermal pad material? I have
found
several sources but none seem close to .01" thick and mostly
precut
for specific CPUs. The stuff at Mouser looks too thick (1 mm or
.04"). Digikey is .01" but is pricey ($56). Perhaps you know
another
source.

I had not even thought about that needing a pad although I did
notice

the depression so I should have.

No virus found in this incoming message.
Checked by AVG.
Version: 7.5.519 / Virus Database: 269.21.7/1329 - Release Date:
3/14/2008 12:33 PM

250. Re: [24GHzHam] Re: SDH thermal pad material

Yahoo group: 24GHzHam
Date: 2008-03-18 03:19:50 UTC
From: Joseph Ruggieri
Topic: 248 Message: 250

Hi Wayne,

The only issue is getting the proper thickness if using copper shim stock. You would probably want .008 with silicon grease on both sides.
Not sure what thickness is used with CPU devices but if it's .009 to .01 it should be ok.
The nice thing about the silicon pads is they will compress leaning no voids when you tighten the board down.

Joe

----- Original Message -----
From: Yoshida, Wayne
To: 24GHzHam@yahoogroups.com
Sent: Monday, March 17, 2008 10:05 PM
Subject: RE: [24GHzHam] Re: SDH thermal pad material

Could copper shim stock be used instead? Or we can probably harvest this material from a defunct computer, right?
de KH6WZ
DM03xq

From: 24GHzHam@yahoogroups.com [mailto:24GHzHam@yahoogroups.com] On Behalf Of Joseph Ruggieri
Sent: Monday, March 17, 2008 7:00 PM
To: 24GHzHam@yahoogroups.com
Subject: Re: [24GHzHam] Re: SDH thermal pad material

Ed and anyone else needing .01 inch thermal pad,

I have 24 rectangular pieces here that are new that I could sell still keeping some for my own projects. They are the sized to use with the standard 250W DC-DC converters.
One piece can be cut to make the two required for one transverter module. They have a peel off backing with adhesive on one side.
Cut to make two pads to fit the gold pads on the bottom. Clean any grease from the gold pads and stick on the thermal pad.

I will make the price very reasonable if anyone needs them, 3.00 each including shipping.
Heck with mousers high prices.
This is not one of my normal products. Only making these available for those unable to find this material to complete their transverter.

Joe KI4NPV

----- Original Message -----
From: w7glf
To: 24GHzHam@yahoogroups.com

Sent: Sunday, March 16, 2008 2:42 AM
Subject: [24GHzHam] Re: SDH failure mode identified!

Joe, Do you know a source for the thermal pad material? I have found several sources but none seem close to .01" thick and mostly precut for specific CPUs. The stuff at Mouser looks too thick (1 mm or .04"). Digikey is .01" but is pricey ($56). Perhaps you know another source.

I had not even thought about that needing a pad although I did notice the depression so I should have.

No virus found in this incoming message.
Checked by AVG.
Version: 7.5.519 / Virus Database: 269.21.7/1329 - Release Date: 3/14/2008 12:33 PM

No virus found in this incoming message.
Checked by AVG.
Version: 7.5.519 / Virus Database: 269.21.7/1332 - Release Date: 3/17/2008 10:48 AM

251. Test of RX sensitivity to LO injection level

Yahoo group: 24GHzHam
Date: 2008-03-23 22:47:44 UTC
From: Frank WB6CWN
Topic: 251 Message: 251

I set up an experiment on the bench today to test RX sensitivity to LO injection levels. In this first unit I tested, there appears to be an optimum LO drive level at +1dBm.

A +15dBm 11.881GHz LO source was connected to the Endwave unit, first through a variable attenuator and then a 20dB coupler. The coupling tap went to an HP thermistor mount to provide an accurate means to measure power at the Endwave LO SMA input. I used an FT-817 for an IF RX at 430.000 with a 10dB attenuator in the IF line.

With the IF radio in CW mode, the IF passband noise begins to pick up with 0dBm LO injection and stops increasing above +3dBm input.

However, repeating the test with a 24.192GHz test signal present shows both the s/n ratio heard in the IF radio and the S meter signal strength peaks at 1dBm LO injection and decreases slightly with increased LO drive. The signal comes back up at higher drive levels, but also with increased IF noise along with it with injection levels at +3dBm and above. In this radio, there is an apparant s/n ratio "sweet spot" at +1dBm LO injection. The effect is quite noticeable in both CW and FM modes.

Ideally this test would be done with a NF + gain meter and a noise source. I lack the latter item and so conducted the test using my amplitude meters and ears. Has anyone else noticed this effect?

Since the TX uses its own mixer, it is likely to respond differently than the RX.

73,
Frank WB6CWN

252. Re: [24GHzHam] Test of RX sensitivity to LO injection level

Yahoo group: 24GHzHam
Date: 2008-03-24 03:43:26 UTC
From: Frank Kelly
Topic: 251 Message: 252

The second unit tested today does not have the same issue. There is a similar but weaker peak in the signal as the RX LO level is increased, but best s/n ratio is achieved when the IF passband noise is a full output. With this second unit, that's at about +8dBm LO drive.
Frank WB6CWN

==========
From: Frank WB6CWN <fm.kelly@...>
Date: 2008/03/23 Sun PM 05:47:44 CDT
To: 24GHzHam@yahoogroups.com
Subject: [24GHzHam] Test of RX sensitivity to LO injection level

I set up an experiment on the bench today to test RX sensitivity to LO injection levels. In this first unit I tested, there appears to be an optimum LO drive level at +1dBm.

A +15dBm 11.881GHz LO source was connected to the Endwave unit, first through a variable attenuator and then a 20dB coupler. The coupling tap went to an HP thermistor mount to provide an accurate means to measure power at the Endwave LO SMA input. I used an FT-817 for an IF RX at 430.000 with a 10dB attenuator in the IF line.

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However, repeating the test with a 24.192GHz test signal present shows both the s/n ratio heard in the IF radio and the S meter signal strength peaks at 1dBm LO injection and decreases slightly with increased LO drive. The signal comes back up at higher drive levels, but also with increased IF noise along with it with injection levels at +3dBm and above. In this radio, there is an apparant s/n ratio "sweet spot" at +1dBm LO injection. The effect is quite noticeable in both CW and FM modes.

Ideally this test would be done with a NF + gain meter and a noise source. I lack the latter item and so conducted the test using my amplitude meters and ears. Has anyone else noticed this effect?

Since the TX uses its own mixer, it is likely to respond differently than the RX.

73,
Frank WB6CWN

253. Re: [24GHzHam] Test of RX sensitivity to LO injection level

Yahoo group: 24GHzHam
Date: 2008-03-24 16:48:44 UTC
From: w0eom@aol.com
Topic: 251 Message: 253

frank - that seems more typical of the ones i have tested.

Will

**********Create a Home Theater Like the Pros. Watch the video on AOL Home.
(http://home.aol.com/diy/home-improvement-eric-stromer?video=15?ncid=aolhom00030000000001)

254. CELERITEK down and up converter on K band

Yahoo group: 24GHzHam
Date: 2008-04-13 20:18:22 UTC
From: f6ftn
Topic: 254 Message: 254

Hi all,
I got from an E-bay seller a K band down converter CRX-26L and an upconverter CTX-26L from CELERITEK but I need to pinpoint supply voltages on these items. Which performance could I expect on 24 GHz band ? Thanks for help.

255. Removing the paint and epoxy on Endwave waveguide filter tuning screws

Yahoo group: 24GHzHam
Date: 2008-04-13 22:15:50 UTC
From: Frank WB6CWN
Topic: 255 Message: 255

I have seen both red paint and what looks like epoxy applied to the Endwave WR42 WG filter tuning screws. The paint comes off easily and completely with acetone and a stiff brush, but I have not found a simple way to remove the epoxy. Small pieces will come off with effort using a knife or small screwdriver to chip away at it, but that takes its toll on the screws which have to be replaced.

Maybe someone has a better idea that preserves the hardware.

Frank WB6CWN

256. Re: [24GHzHam] Removing the paint and epoxy on Endwave waveguide filter tuning screws

Yahoo group: 24GHzHam
Date: 2008-04-14 09:42:02 UTC
From: Russ Stewart
Topic: 255 Message: 256

Frank WB6CWN wrote:
>
> I have seen both red paint and what looks like epoxy applied to the
> Endwave WR42 WG filter tuning screws. The paint comes off easily and
> completely with acetone and a stiff brush, but I have not found a
> simple way to remove the epoxy. Small pieces will come off with
> effort using a knife or small screwdriver to chip away at it, but that
> takes its toll on the screws which have to be replaced.
>
> Maybe someone has a better idea that preserves the hardware.
>
> Frank WB6CWN
>
>
I had some success softening epoxy with methanol once but it took about
a month. I have no idea how well the araldite in question was made up in
the first place and how the bonded surfaces were prepared initially but
it did eventually scrape off in chunks.

I would not use it on pcb's and components long term, in case the same
effect was observed.
Also remember Methanol is toxic !!! .... oxidises to Formic acid in the
bloodstream.

regards de Russ G4PBP

257. Re: [24GHzHam] Removing the paint and epoxy on Endwave waveguide filter tuning screws

Yahoo group: 24GHzHam
Date: 2008-04-18 10:21:13 UTC
From: Jaap Last
Topic: 255 Message: 257

Hello Frank,

Try a thick layer of paint-remover and wait a few hours.

Jaap PA0T

----- Original Message -----
From: Frank WB6CWN
To: 24GHzHam@yahoogroups.com
Sent: Monday, April 14, 2008 12:15 AM
Subject: [24GHzHam] Removing the paint and epoxy on Endwave waveguide filter tuning screws

I have seen both red paint and what looks like epoxy applied to the
Endwave WR42 WG filter tuning screws. The paint comes off easily and
completely with acetone and a stiff brush, but I have not found a
simple way to remove the epoxy. Small pieces will come off with
effort using a knife or small screwdriver to chip away at it, but that
takes its toll on the screws which have to be replaced.

Maybe someone has a better idea that preserves the hardware.

Frank WB6CWN

258. Re: {Disarmed} [24GHzHam] Removing the paint and epoxy on Endwave waveguide filter tuning screws

Yahoo group: 24GHzHam
Date: 2008-04-18 20:44:12 UTC
From: Andries Lohmeijer
Topic: 255 Message: 258

Hello Frank,

I did put waveguide filters into an (hot air)oven at about 200 degrees
for about 10 minutes.
You can remove the epoxy quiet easy with a knife when hot. Taking the
screws out is no problem at all at this
temperature but the epoxy will remain on the screws in that case.
I am also told that methanolic acid (HCOOH) will weaken epoxy but i
never tried by lack of this chemical.

Succes,
Andries PE1BMC

Frank WB6CWN schreef:
>
> I have seen both red paint and what looks like epoxy applied to the
> Endwave WR42 WG filter tuning screws. The paint comes off easily and
> completely with acetone and a stiff brush, but I have not found a
> simple way to remove the epoxy. Small pieces will come off with
> effort using a knife or small screwdriver to chip away at it, but that
> takes its toll on the screws which have to be replaced.
>
> Maybe someone has a better idea that preserves the hardware.
>
> Frank WB6CWN
>
>

--
Andries Lohmeijer / PE1BMC
Lipperkerkstraat 85
7511 CV Enschede
053-432 22 54

259. I am mystified

Yahoo group: 24GHzHam
Date: 2008-04-20 22:26:18 UTC
From: w7glf
Topic: 259 Message: 259

After making the change to bias the ALH216 correctly my power output level has dropped down to 10 mW. I have checked MAV-11 and tried 1dBm and 8dBm LO levels with no change. The PA seems OK, still 30 dB gain, but all I can get out of input side of waveguide is -20 dBm. I assume I should be seeing close to 0 dBm. I saturate using about -18 dBm of drive at 432 MHz.

I checked the voltage on the resistors and on the supply side it is 5.5 volts and on the other side of the two 27Ks is 4.31 V which works out to 1.2/13.5 or 89 ma. I don't think it is wise to reverse the change after reading Joe's analysis. I can't figure out why the drop in power.

Any ideas short of taking the cover off and trying to see if mixer or first amp is shot? Does anyone know whether the same mixer is used on Rx and on Tx? My Rx still seems as sensitive as ever so if it is a shared mixer that seems to point a finger at ALH216.

Unfortunately that device seems to cost $37/unit and if I am reading the web site correctly it is sold in units of 10. Even if I got a replacement I would have to get it wire bonded without spending a fortune - I suspect cheaper just to buy a DB6NT transverter.

260. Re: [24GHzHam] I am mystified

Yahoo group: 24GHzHam
Date: 2008-04-21 02:21:17 UTC
From: Joseph Ruggieri
Topic: 259 Message: 260

Are you sure you removed the 1.78K resistor in next to pin 3 on the op-amp?

Joe

----- Original Message -----
From: w7glf
To: 24GHzHam@yahoogroups.com
Sent: Sunday, April 20, 2008 6:26 PM
Subject: [24GHzHam] I am mystified

After making the change to bias the ALH216 correctly my power output level has dropped down to 10 mW. I have checked MAV-11 and tried 1dBm and 8dBm LO levels with no change. The PA seems OK, still 30 dB gain, but all I can get out of input side of waveguide is -20 dBm. I assume I should be seeing close to 0 dBm. I saturate using about -18 dBm of drive at 432 MHz.

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Unfortunately that device seems to cost $37/unit and if I am reading the web site correctly it is sold in units of 10. Even if I got a replacement I would have to get it wire bonded without spending a fortune - I suspect cheaper just to buy a DB6NT transverter.

No virus found in this incoming message.
Checked by AVG.
Version: 7.5.524 / Virus Database: 269.23.2/1387 - Release Date: 4/19/2008 11:31 AM

261. Re: [24GHzHam] I am mystified

Yahoo group: 24GHzHam
Date: 2008-04-21 15:51:42 UTC
From: Joseph Ruggieri
Topic: 259 Message: 261

Hi,

I just realized you said (27Ks). I hope you meant 27 ohms, not 27K ohms.

Joe

----- Original Message -----
From: w7glf
To: 24GHzHam@yahoogroups.com
Sent: Sunday, April 20, 2008 6:26 PM
Subject: [24GHzHam] I am mystified

After making the change to bias the ALH216 correctly my power output level has dropped down to 10 mW. I have checked MAV-11 and tried 1dBm and 8dBm LO levels with no change. The PA seems OK, still 30 dB gain, but all I can get out of input side of waveguide is -20 dBm. I assume I should be seeing close to 0 dBm. I saturate using about -18 dBm of drive at 432 MHz.

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No virus found in this incoming message.
Checked by AVG.
Version: 7.5.524 / Virus Database: 269.23.2/1387 - Release Date: 4/19/2008 11:31 AM

262. Re: I am mystified

Yahoo group: 24GHzHam
Date: 2008-04-22 03:38:56 UTC
From: w7glf
Topic: 259 Message: 262

Sorry 27 ohms (oops).

263. Re: I am mystified

Yahoo group: 24GHzHam
Date: 2008-04-22 03:47:19 UTC
From: w7glf
Topic: 259 Message: 263

Yep. I even checked it with ohmmeter 1.78K just in case my eyes were fooling me. The voltage on top of the two parallel 27 ohms is 5.5 Volts which I think indicates I removed the correct resistor also otherwise I think I would have measured 4.62 volts. The voltage on the bottom of the parallel 27 ohm resistors (closer to connector) was 4.31 volts which I assume is the voltage to the ALH216. If I take difference I get 5.5 - 4.31 = 1.21 / 13.5 ohms = .0888 ma. Am I doing something wrong? Seems well within the Vd and Id in the ALH216 datasheet.

--- In 24GHzHam@yahoogroups.com, "Joseph Ruggieri" <jruggieri3@...> wrote:
>
>
> Are you sure you removed the 1.78K resistor in next to pin 3 on the op-amp?
>
> Joe
>

264. I am no longer mystified

Yahoo group: 24GHzHam
Date: 2008-04-27 05:15:26 UTC
From: w7glf
Topic: 259 Message: 264

I think I have found my problem. I have been using FT-817 as an IF radio with the factory TX gain settings all set down to 0. Then I have been playing with just TXG (menu 53) to adjust output power. Today I hooked IF radio directly into power meter and found that apparently some amp in the 817 is saturating. The power goes up to about -10 dBm and then starts going down again as I adjust the level upwards. I have also 10 dB attenuation currently in the TX IF so the radio is only getting -20dBm drive.

Until now I thought it was the SDH which was saturating but it is my IF radio. I need to do some further testing but I have saw 200 mW output today so I no longer suspect the SDH. I want to run the same level into my 24 GHz as I do for my 10 GHz since I use the same IF radio so I will need to do some experimenting to figure out how much attenuation to put in TX line in transverter.

265. IF drive?

Yahoo group: 24GHzHam
Date: 2008-04-30 16:25:16 UTC
From: w7glf
Topic: 265 Message: 265

I am still trying to determine whether my unit is misbehaving or not. I searched the list but could not find anyone who posted the answer to this question.

I am using 432 IF which I believe a number of people are, I was wondering approximately how much IF drive was needed to achieve normal output (with attenuator set at least attenuation)?

Is it like -20 dBm, -10 dBm, or 0 dBm? From the datasheet it looks like it should be around -18 dBm but I could be misunderstanding the datasheet. At -18dBm mine is only putting out 10 dBm. If I increase the drive I get more output but I am afraid of overdriving something to the point of failure.

266. Re: [24GHzHam] IF drive?

Yahoo group: 24GHzHam
Date: 2008-04-30 18:09:28 UTC
From: Jaap Last
Topic: 265 Message: 266

If you look at the file sdhmeting.doc (uploaded jan 12th bij PA0EZ), you can see that the drive level must be around 5 dBm. Without attenuator. LO level is about 7 dBm.

'73 Jaap PA0T

----- Original Message -----
From: w7glf
To: 24GHzHam@yahoogroups.com
Sent: Wednesday, April 30, 2008 6:25 PM
Subject: [24GHzHam] IF drive?

I am still trying to determine whether my unit is misbehaving or not. I searched the list but could not find anyone who posted the answer to this question.

I am using 432 IF which I believe a number of people are, I was wondering approximately how much IF drive was needed to achieve normal output (with attenuator set at least attenuation)?

Is it like -20 dBm, -10 dBm, or 0 dBm? From the datasheet it looks like it should be around -18 dBm but I could be misunderstanding the datasheet. At -18dBm mine is only putting out 10 dBm. If I increase the drive I get more output but I am afraid of overdriving something to the point of failure.

267. Re: [24GHzHam] IF drive?

Yahoo group: 24GHzHam
Date: 2008-04-30 18:12:31 UTC
From: Joseph Ruggieri
Topic: 265 Message: 267

First let me say, do believe anything that published data sheet says.
Most of the typical values and limits are no where close to the actual.
That also includes the supply currents and the LO power etc.

I believe the reason for the on board attenuator switch is that the typical cascaded gain of the TX chain can change 15dB from unit to unit
and the switched attenuator was a method of normalizing each board.
For the units that I setup the input power for full output power was between -10 and -3dBm with the attenuator off.
What I did is normalize my boards for 0dBm input for full power output using the attenuator switches.
I setup the IF transceiver for one watt output and switch in a 30dB attenuator in the TX mode (0dBm to the module).

Joe KI4NPV

----- Original Message -----
From: w7glf
To: 24GHzHam@yahoogroups.com
Sent: Wednesday, April 30, 2008 12:25 PM
Subject: [24GHzHam] IF drive?

I am still trying to determine whether my unit is misbehaving or not.
I searched the list but could not find anyone who posted the answer
to this question.

I am using 432 IF which I believe a number of people are, I was
wondering approximately how much IF drive was needed to achieve normal
output (with attenuator set at least attenuation)?

Is it like -20 dBm, -10 dBm, or 0 dBm? From the datasheet it looks
like it should be around -18 dBm but I could be misunderstanding the
datasheet. At -18dBm mine is only putting out 10 dBm. If I increase
the drive I get more output but I am afraid of overdriving something
to the point of failure.

No virus found in this incoming message.
Checked by AVG.
Version: 7.5.524 / Virus Database: 269.23.6/1404 - Release Date: 4/29/2008 6:27 PM

268. Re: [24GHzHam] IF drive?

Yahoo group: 24GHzHam
Date: 2008-04-30 18:13:53 UTC
From: Joseph Ruggieri
Topic: 265 Message: 268

I think you mean -5dBm, not 5dBm.

Joe
----- Original Message -----
From: Jaap Last
To: 24GHzHam@yahoogroups.com
Sent: Wednesday, April 30, 2008 2:09 PM
Subject: Re: [24GHzHam] IF drive?

If you look at the file sdhmeting.doc (uploaded jan 12th bij PA0EZ), you can see that the drive level must be around 5 dBm. Without attenuator. LO level is about 7 dBm.

'73 Jaap PA0T

----- Original Message -----
From: w7glf
To: 24GHzHam@yahoogroups.com
Sent: Wednesday, April 30, 2008 6:25 PM
Subject: [24GHzHam] IF drive?

I am still trying to determine whether my unit is misbehaving or not.
I searched the list but could not find anyone who posted the answer
to this question.

I am using 432 IF which I believe a number of people are, I was
wondering approximately how much IF drive was needed to achieve normal
output (with attenuator set at least attenuation)?

Is it like -20 dBm, -10 dBm, or 0 dBm? From the datasheet it looks
like it should be around -18 dBm but I could be misunderstanding the
datasheet. At -18dBm mine is only putting out 10 dBm. If I increase
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to the point of failure.

No virus found in this incoming message.
Checked by AVG.
Version: 7.5.524 / Virus Database: 269.23.6/1404 - Release Date: 4/29/2008 6:27 PM

269. Re: IF drive?

Yahoo group: 24GHzHam
Date: 2008-04-30 18:15:15 UTC
From: Brian Flynn
Topic: 265 Message: 269

My unit requires around 0dBm for full output. I also using 432 MHz as the IF and I am using it in the European NB section 24048 - 24050 MHz. The data sheet I have does not give an IF signal leve for Tx. It only states that teh small signal gain on Tx is 35 - 44 dB. Given that I have the attenuator wound in fairly far that is about right. I get about 1 watt out from mine. I bought two units. One is fine but teh other appears to have a dead Tx mixer. The may have been taken out of use for some reason ???

73s

Brian, GM8BJF

PS I plan to go out /P with mine this weekend as the is a eurpean microwave contest on. Hopefully might make the odd contact. To my knowledge there have not been contacts from GM on 24 G before.

--- In 24GHzHam@yahoogroups.com, "w7glf" <w7glf@...> wrote:
>
> I am still trying to determine whether my unit is misbehaving or not.
> I searched the list but could not find anyone who posted the answer
> to this question.
>
> I am using 432 IF which I believe a number of people are, I was
> wondering approximately how much IF drive was needed to achieve normal
> output (with attenuator set at least attenuation)?
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> Is it like -20 dBm, -10 dBm, or 0 dBm? From the datasheet it looks
> like it should be around -18 dBm but I could be misunderstanding the
> datasheet. At -18dBm mine is only putting out 10 dBm. If I increase
> the drive I get more output but I am afraid of overdriving something
> to the point of failure.
>

270. Re: IF drive?

Yahoo group: 24GHzHam
Date: 2008-05-01 05:20:09 UTC
From: w7glf
Topic: 265 Message: 270

Thanks everyone - well clearly one of my problems is I have been too paranoid about overdriving the unit. 0 dBm seems to be consensus and I have been nowhere close to that - more like -18 dBm. After going back to the test bench I see about 1 watt out! Thanks guys!

271. MTS1500 Frequecy Offset

Yahoo group: 24GHzHam
Date: 2008-05-11 10:44:20 UTC
From: bartram_chris
Topic: 271 Message: 271

Hello All

I now have my Endwave unit running in a transverter with very satisfying results: about 2W at the output WG flange. The sensitivity also seems good, but my ability to make meaningful noise figure measurements on my bench runs-out at 18GHz. I'll make some cold-sky to ground measurements once I've finished the packaging exercise.

One problem I've come up against, and which I'd be interested to see if anyone else has addressed is the frequency offset of the MTS-1500 synthesiser I'm using. The stability with temperature and retrace both seem fine - given an hour to stabilise, the oscillator comes-up on the same frequency within a few hundred Hz (at 24GHz) from cold. However, it shows a frequency offset of about +10ppm (I have to tune 225kHz low at 24.048GHz) This looks suspiciously like mis-setting of the control voltage or an internal fault.

Before I perform surgery, does anyone know if there is an external frequency adjustment? I note that there are two undesignated pins on the SIL connector, but some tentative probing hasn't led to any conclusions.

Vy 73

Chris
GW4DGU

272. Re: MTS1500 Frequecy Offset

Yahoo group: 24GHzHam
Date: 2008-05-11 14:17:18 UTC
From: ww2r_dave
Topic: 271 Message: 272

if only it was that easy (tuning via the sil pin)..... see my findings in the last paragraph of message #89

if the control voltage is wrongly set it will not lock at all (voice of experience).

If you look at mts1500_CA.pdf in the files area the maximum freq error i have measured is 13kHz, yours seems 10 times higher than this

i put the spread down to reference errors

the good news is that the xtal osc freq reference (around 50MHz) has a "tune pin"

the bad news is that it is in a plated through hole and very well grounded and it doesnt have any mechanical adjustments. It is a brave man who gets to see this, even braver to do the scalpel work

i did start work on an external reference, but never got too far. Some other verticoms that have appeared have an external 50MHz reference which is much easier to deal with than the oddball freq ref in the 12G units

I did extract the PIC in the unit and try to read it...its code protected!

Dave

ww2r

--- In 24GHzHam@yahoogroups.com, "bartram_chris" <cbartram@...> wrote:
>
> Hello All
>
> One problem I've come up against, and which I'd be interested to see
> if anyone else has addressed is the frequency offset of the MTS-1500
> synthesiser I'm using. The stability with temperature and retrace both
> seem fine - given an hour to stabilise, the oscillator comes-up on the
> same frequency within a few hundred Hz (at 24GHz) from cold. However,
> it shows a frequency offset of about +10ppm (I have to tune 225kHz low

> at 24.048GHz) This looks suspiciously like mis-setting of the
control
> voltage or an internal fault.
>
> Before I perform surgery, does anyone know if there is an external
> frequency adjustment? I note that there are two undesignated pins
on
> the SIL connector, but some tentative probing hasn't led to any
> conclusions.
>
> Vy 73
>
> Chris
> GW4DGU
>

273. Re: [24GHzHam] Re: MTS1500 Frequency Offset

Yahoo group: 24GHzHam
Date: 2008-05-11 20:03:06 UTC
From: Christopher Bartram
Topic: 271 Message: 273

Hello Dave

Thanks for the comments. Like you, I'm 99.99% sure that the problem is associated with that reference oscillator, and probably explains why the unit found its way onto Ebay ;-) As the frequency stability seems fine and I don't (usually!) have too many problems with mental arithmetic, I'll leave things as they are until I find time to make the unit to lock to an external reference. Fortunately, I have the kit and experience to desolder the OCXO, unless it's fitted in a very unusual way.

If anyone reading this has a spare MTS-1500 they'd like to sell me I'm in the market...

Vy 73

Chris
GW4DGU

274. Congratulations to GM8BJF for first 24GHz QSO GM to GD

Yahoo group: 24GHzHam
Date: 2008-05-11 20:39:31 UTC
From: Peter Bates
Topic: 274 Message: 274

Just to let you know that I witnessed the first QSO between Scotland and the Isle of Man between Brian (GM8BJF) and GD0EMG. Brian uses the Endwave modules and is achieving about 1 Watt output. The path was 56 miles line of sight over the sea and the SSB signals were very strong both ways. I was very impressed by the stability achieved - no noticeable drift throughout the QSO.
Brian may be a bit too modest to blow his own trumpet - so I am doing it for him. I am now working on getting my own set up going on this band.
Pete GM4BYF

275. Re: [24GHzHam] Congratulations to GM8BJF for first 24GHz QSO GM to GD

Yahoo group: 24GHzHam
Date: 2008-05-11 21:05:01 UTC
From: Brian Howie
Topic: 274 Message: 275

In message <g07li3+vhn4@...>, Peter Bates
<gm4byf@...> writes
>
>Just to let you know that I witnessed the first QSO between Scotland
>and the Isle of Man between Brian (GM8BJF) and GD0EMG. Brian uses
>the
>Endwave modules and is achieving about 1 Watt output. The path was 56
>miles line of sight over the sea and the SSB signals were very strong
>both ways. I was very impressed by the stability achieved - no
>noticeable drift throughout the QSO.
>Brian may be a bit too modest to blow his own trumpet - so I am doing
>it for him. I am now working on getting my own set up going on this
>band.
>Pete GM4BYF

I listened to the recordings - very impressed. It was a difficult path,
bad enough on 10Gigs. Must get mine going.

Pete/Brian ,can u arrange for the recordings to be put on the Lothian's
website ?

Congrats to all.

Brian GM4DIJ
--
Brian Howie

276. Milliwave 24G PA

Yahoo group: 24GHzHam
Date: 2008-05-16 14:41:23 UTC
From: g4eat
Topic: 276 Message: 276

Anyone have a good source of these SSPA's?

I am building a 24G beacon pointing at HB9 (almost 700km). I have wkd HB9AMH/P many times at 59+60 on 3cms when sitting in a high level tropo duct, so now I am hoping for a miracle dry duct to show up for 24G world record attempt. Beacon will be switched on during tropo opening.

I have a beacon driver (+13dBm output) and modified TWT that needs >1W output for 20W Output. Also have 2ft Andrew dish so ERP will be high! So looking for something to give 20dB+ gain and 1W+ output. My last 0.5W Milliwave SSPA was donated to the GB3FNM beacon project.

Any Milliwave pointers greatly appreciated. Other manufrs/vendors OK too!

73
John G4EAT

277. Anyone know a upplier of crystals in a TO5 (HC35-U) package

Yahoo group: 24GHzHam
Date: 2008-05-21 12:00:11 UTC
From: Peter Bates
Topic: 277 Message: 277

To get my 24 GHz set up going, I need a 1 off custom crystal at about 105 MHz in a TO5 (HC35-U) package. So far I have drawn a blank with QuartSLab and EUROQUARTZ. Any source any where in the world will do.
Many Thanks

Pete GM4BYF

278. Re: Anyone know a upplier of crystals in a TO5 (HC35-U) package

Yahoo group: 24GHzHam
Date: 2008-05-21 14:37:11 UTC
From: sm4rwi
Topic: 277 Message: 278

--- In 24GHzHam@yahoogroups.com, "Peter Bates" <gm4byf@...> wrote:
>
> To get my 24 GHz set up going, I need a 1 off custom crystal at about
> 105 MHz in a TO5 (HC35-U) package. So far I have drawn a blank with
> QuartSLab and EUROQUARTZ. Any source any where in the world will do.
> Many Thanks
>
> Pete GM4BYF
>

Hi Pete,

Try with International Crystal Manufacturing Company, Inc. (ICM)
http://www.icmfg.com/

Magnus - SM4RWI

279. Re: [24GHzHam] Anyone know a upplier of crystals in a TO5 (HC35-U) package

Yahoo group: 24GHzHam
Date: 2008-05-22 19:06:30 UTC
From: Joseph Ruggieri
Topic: 277 Message: 279

High Peter,

I have one TO-5 105.00000MHz xtal rated at 75-80 degrees C removed from a Macom PLO if interested.

Email me at jruggieri3@ cfl.rr.com .

Thanks,

Joe KI4NPV

----- Original Message -----
From: Peter Bates
To: 24GHzHam@yahoogroups.com
Sent: Wednesday, May 21, 2008 8:00 AM
Subject: [24GHzHam] Anyone know a upplier of crystals in a TO5 (HC35-U) package

To get my 24 GHz set up going, I need a 1 off custom crystal at about
105 MHz in a TO5 (HC35-U) package. So far I have drawn a blank with
QuartSLab and EUROQUARTZ. Any source any where in the world will do.
Many Thanks

Pete GM4BYF

No virus found in this incoming message.
Checked by AVG.
Version: 8.0.100 / Virus Database: 269.23.21/1457 - Release Date: 5/20/2008 4:45 PM

280. Power supply (dc-dc converter) for the SDH units?

Yahoo group: 24GHzHam
Date: 2008-05-29 01:45:38 UTC
From: wayne_kh6wz
Topic: 280 Message: 280

I made a dc-dc converter for my SDH unit last night. What are the rest of you using to get the proper voltages from the mobile 13.8V car battery? I posted a PDF of what I did in the files section. . . .
de Wayne KH6WZ

281. Re: [24GHzHam] Power supply (dc-dc converter) for the SDH units?

Yahoo group: 24GHzHam
Date: 2008-05-29 01:55:50 UTC
From: Tony Long
Topic: 280 Message: 281

> I made a dc-dc converter for my SDH unit last night. What are the rest
> of you using to get the proper voltages from the mobile 13.8V car
> battery? I posted a PDF of what I did in the files section. . . .
> de Wayne KH6WZ
>
>

I built DC-DC converters for everything. For +12 I have a +12 in +12 out converter so even if it dips below 11 volts I have +12. That was an eBay find from several years ago. Also I have a -12 inverter that is an SDMG find from many years ago which is regulated down to -5 with a 7905. +5 is generated from a 7805 with a big heatsink on it.

For my 47 GHz rig (which I really need to get finised soon!) I built up switching DC-DC converters for everything, including +5, for maximum efficiency. I have a single die-cast box with a bunch of RF feedthroughs and a status LED. All the supplies are contained in this single box for maximally clean DC and a clean chassis. 24 GHz was more space constrained so I ended up attaching them to the walls of the chassis.

-Tony KC6QHP

282. Re: Power supply (dc-dc converter) for the SDH units?

Yahoo group: 24GHzHam
Date: 2008-05-29 01:59:00 UTC
From: wayne_kh6wz
Topic: 280 Message: 282

--- In 24GHzHam@yahoogroups.com, "Tony Long" <tony@...> wrote:
>
> > I made a dc-dc converter for my SDH unit last night. What are
the rest
> > of you using to get the proper voltages from the mobile 13.8V car
> > battery? I posted a PDF of what I did in the files section. . . .
> > de Wayne KH6WZ
> >
> >
>
> I built DC-DC converters for everything. For +12 I have a +12 in
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> converter so even if it dips below 11 volts I have +12. That was
an eBay
> find from several years ago. Also I have a -12 inverter that is
an SDMG
> find from many years ago which is regulated down to -5 with a
7905. +5 is
> generated from a 7805 with a big heatsink on it.
>
> For my 47 GHz rig (which I really need to get finised soon!) I
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> switching DC-DC converters for everything, including +5, for
maximum
> efficiency. I have a single die-cast box with a bunch of RF
feedthroughs
> and a status LED. All the supplies are contained in this single
box for
> maximally clean DC and a clean chassis. 24 GHz was more space
constrained
> so I ended up attaching them to the walls of the chassis.
>
> -Tony KC6QHP
>
Tony-
Yes, I looked very closely at your images. Mine is similar, with a
Power General 2A unit (little silver box). I will post images soon.
Wayne KH6WZ

283. Re: [24GHzHam] Re: Power supply (dc-dc converter) for the SDH units?

Yahoo group: 24GHzHam
Date: 2008-06-02 03:45:52 UTC
From: Frank Kelly
Topic: 280 Message: 283

Hi Wayne,
What are you using +5V for? Did you bypass the LT1083?
If not, the radio needs about 7V to keep the LT regulator from dropping out.
Mine pulls about 2A off that line which is more than a 7805 will supply.
I am curious.
Frank

wayne_kh6wz wrote:
>
> --- In 24GHzHam@yahoogroups.com <mailto:24GHzHam%40yahoogroups.com>,
> "Tony Long" <tony@...> wrote:
> >
> > > I made a dc-dc converter for my SDH unit last night. What are
> the rest
> > > of you using to get the proper voltages from the mobile 13.8V car
> > > battery? I posted a PDF of what I did in the files section. . . .
> > > de Wayne KH6WZ
> > >
> > >
> >
> > I built DC-DC converters for everything. For +12 I have a +12 in
> +12 out
> > converter so even if it dips below 11 volts I have +12. That was
> an eBay
> > find from several years ago. Also I have a -12 inverter that is
> an SDMG
> > find from many years ago which is regulated down to -5 with a
> 7905. +5 is
> > generated from a 7805 with a big heatsink on it.
> >
> > For my 47 GHz rig (which I really need to get finised soon!) I
> built up
> > switching DC-DC converters for everything, including +5, for
> maximum
> > efficiency. I have a single die-cast box with a bunch of RF
> feedthroughs
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> box for
> > maximally clean DC and a clean chassis. 24 GHz was more space
> constrained
> > so I ended up attaching them to the walls of the chassis.
> >
> > -Tony KC6QHP
> >
> Tony-

> Yes, I looked very closely at your images. Mine is similar, with a
> Power General 2A unit (little silver box). I will post images soon.
> Wayne KH6WZ
>
>

284. Re: 12,5 Ghz oscillator

Yahoo group: 24GHzHam
Date: 2008-08-20 00:33:22 UTC
From: Gary VK2KYP
Topic: 210 Message: 284

Hi Piet,
Have you made any progress with your microsource oscillator.

I am about to look at mine again.

73 Gary VK2KYP

--- In 24GHzHam@yahoogroups.com, "Gary VK2KYP" <gbeech@...> wrote:
>
> Hi Piet,
> My oscillator is a
>
> Microsource SNP101341001
> 10.575-13.35 GHz
>
> I think this is the same as yours.
>
> regards Gary
>
>
> --- In 24GHzHam@yahoogroups.com, "pa0vtw" <pa0vtw@> wrote:
> >
> > Hi Gary
> >
> > i don`t know that we have the same module
> > my module has a 15 pin connector
> > i put a picture on my album
> > then you see my module,it has a
> > pic prosessor in it the number is 16c72a
> >
> >
> > 73`Piet
> >
>

285. Re: 12,5 Ghz oscillator

Yahoo group: 24GHzHam
Date: 2008-08-24 17:42:43 UTC
From: pa0vtw
Topic: 210 Message: 285

--- In 24GHzHam@yahoogroups.com, "Gary VK2KYP" <gbeech@...> wrote:
>
> Hi Piet,
> Have you made any progress with your microsource oscillator.
>
> I am about to look at mine again.
>
> 73 Gary VK2KYP
>
> --- In 24GHzHam@yahoogroups.com, "Gary VK2KYP" <gbeech@> wrote:
> >
> > Hi Piet,
> > My oscillator is a
> >
> > Microsource SNP101341001
> > 10.575-13.35 GHz
> >
> > I think this is the same as yours.
> >
> > regards Gary
> >

hello Gary
I have´t look at my, but i found sam info
on internet from Elcom that are the same boxes
as wat wi have
we neat samone ho has the nohou to program that device
> >i will put the info from Elcom in my photo box

regards Piet PA0VTW
> > --- In 24GHzHam@yahoogroups.com, "pa0vtw" <pa0vtw@> wrote:
> > >
> > > Hi Gary
> > >
> > > i don`t know that we have the same module
> > > my module has a 15 pin connector
> > > i put a picture on my album
> > > then you see my module,it has a
> > > pic prosessor in it the number is 16c72a
> > >
> > >
> > > 73`Piet
> > >
> >
>

286. New file uploaded to 24GHzHam

Yahoo group: 24GHzHam
Date: 2008-08-24 17:57:13 UTC
From: 24GHzHam@yahoogroups.com
Topic: 31 Message: 286

```
Hello,

This email message is a notification to let you know that
a file has been uploaded to the Files area of the 24GHzHam
group.

File : /cdfsl.pdf
Uploaded by : pa0vtw <pa0vtw@...>
Description : Elcom

You can access this file at the URL:
http://groups.yahoo.com/group/24GHzHam/files/cdfsl.pdf

To learn more about file sharing for your group, please visit:
http://help.yahoo.com/l/us/yahoo/groups/original/members/web/index.htmlfiles

Regards,

pa0vtw <pa0vtw@...>
```

287. Re: 12,5 Ghz oscillator

Yahoo group: 24GHzHam
Date: 2008-08-24 23:43:16 UTC
From: Gary VK2KYP
Topic: 210 Message: 287

Hi Piet,
I carried out some tests with my unit on the weekend.

The default frequency for my one is 12.5 GHz

Dave G4fre has written some software for the Elcom units which you can download from his website.

I have modified this slightly and programmed a PIC, I hope to try this soon.

73 Gary VK2KYP

--- In 24GHzHam@yahoogroups.com, "pa0vtw" <pa0vtw@...> wrote:
>
> --- In 24GHzHam@yahoogroups.com, "Gary VK2KYP" <gbeech@> wrote:
> >
> > Hi Piet,
> > Have you made any progress with your microsource oscillator.
> >
> > I am about to look at mine again.
> >
> > 73 Gary VK2KYP
> >
> > --- In 24GHzHam@yahoogroups.com, "Gary VK2KYP" <gbeech@> wrote:
> > >
> > > Hi Piet,
> > > My oscillator is a
> > >
> > > Microsource SNP101341001
> > > 10.575-13.35 GHz
> > >
> > > I think this is the same as yours.
> > >
> > > regards Gary
> > >
>
>
> hello Gary
> I have´t look at my, but i found sam info
> on internet from Elcom that are the same boxes
> as wat wi have
> we neat samone ho has the nohou to program that device
> > >i will put the info from Elcom in my photo box
>
> regards Piet PA0VTW

> > > --- In 24GHzHam@yahoogroups.com, "pa0vtw" <pa0vtw@> wrote:
> > > >
> > > > Hi Gary
> > > >
> > > > i don`t know that we have the same module
> > > > my module has a 15 pin connector
> > > > i put a picture on my album
> > > > then you see my module,it has a
> > > > pic prosessor in it the number is 16c72a
> > > >
> > > >
> > > > 73`Piet
> > > >
> > >
> >
>

288. DMC Synthesized LO and other bits for sale

Yahoo group: 24GHzHam
Date: 2008-08-25 00:26:25 UTC
From: David Ackrill
Topic: 210 Message: 288

I'm selling off some bits and pieces of gear that could be useful for 24GHz, if anyone is interested, before they go on eBay.

All prices plus P&P

DMC-110366-321 Synthesized LO for ?40.00 (I have some information and a manual by W6BY for this unit)

4 off Alcatel Ferrocom 60D122-04 circulators (one port terminated - one with SMA male, other with SMA female connectors) 21.2 - 23.6GHz for ?5.00 each

23M Down converter unit type number 131-110126-003 with associated 1542MHz oscillator for ?10.00

23M Up converter type number 131-110365-002 with 22.512GHz waveguide filter (including adjusters) and 310MHz Bandpass filter (DMC-110746-001) for ?5.00

Photos of all units available on request.

Dave (G0DJA)

289. Re: 12,5 Ghz oscillator

Yahoo group: 24GHzHam
Date: 2008-09-02 00:54:44 UTC
From: Gary VK2KYP
Topic: 210 Message: 289

Hi All,
I have been working with Microsource SNP101341001 Synth. (10.575-13.35 GHz) Using Dave G4FRE software for the Elcom 1201s Synth. which can be downloaded from his webpage. I have been able to command the Microsourch Synth up to 11.950 Ghz. When I try to go beyond 12 Ghz it will not accept the command. Has anyone else tried this?

I aslo stated above that the default frequency of my unit was 12.5 GHz this is incorrect,the dafault frequency is 12.0 Ghz.

73 Gary VK2KYP

--- In 24GHzHam@yahoogroups.com, "Gary VK2KYP" <gbeech@...> wrote:
>
> Hi Piet,
> I carried out some tests with my unit on the weekend.
>
> The default frequency for my one is 12.5 GHz
>
> Dave G4fre has written some software for the Elcom units which you
> can download from his website.
>
> I have modified this slightly and programmed a PIC, I hope to try
> this soon.
>
> 73 Gary VK2KYP
>
>
> --- In 24GHzHam@yahoogroups.com, "pa0vtw" <pa0vtw@> wrote:
> >
> > --- In 24GHzHam@yahoogroups.com, "Gary VK2KYP" <gbeech@> wrote:
> > >
> > > Hi Piet,
> > > Have you made any progress with your microsource oscillator.
> > >
> > > I am about to look at mine again.
> > >
> > > 73 Gary VK2KYP
> > >
> > > --- In 24GHzHam@yahoogroups.com, "Gary VK2KYP" <gbeech@> wrote:
> > > >
> > > > Hi Piet,
> > > > My oscillator is a
> > > >
> > > > Microsource SNP101341001
> > > > 10.575-13.35 GHz

> > > >
> > > > I think this is the same as yours.
> > > >
> > > > regards Gary
> > > >
> >
> >
> > hello Gary
> > I have´t look at my, but i found sam info
> > on internet from Elcom that are the same boxes
> > as wat wi have
> > we neat samone ho has the nohou to program that device
> > > >i will put the info from Elcom in my photo box
> >
> > regards Piet PA0VTW
> > > > --- In 24GHzHam@...m, "pa0vtw" <pa0vtw@> wrote:
> > > > >
> > > > > Hi Gary
> > > > >
> > > > > i don`t know that we have the same module
> > > > > my module has a 15 pin connector
> > > > > i put a picture on my album
> > > > > then you see my module,it has a
> > > > > pic prosessor in it the number is 16c72a
> > > > >
> > > > >
> > > > > 73`Piet
> > > > >
> > > >
> > >
> >
>

290. Re: 12,5 Ghz oscillator

Yahoo group: 24GHzHam
Date: 2008-09-08 01:09:54 UTC
From: Gary VK2KYP
Topic: 210 Message: 290

Hi All,
I have made some more prorress with the Synthesisers.

For Synth. output frequency between 10.575 GHZ to 12.0 GHz the value
entered to Daves program is multiplied by 3

For Synth. output frequency between 12.00 GHz to 13.5 GHz the value
entered to Daves program is multiplied by 2

I hope this helps.

73 Gary VK2KYP

For --- In 24GHzHam@yahoogroups.com, "Gary VK2KYP" <gbeech@...> wrote:
>
> Hi All,
> I have been working with Microsource SNP101341001 Synth. (10.575-
> 13.35 GHz) Using Dave G4FRE software for the Elcom 1201s Synth.
which
> can be downloaded from his webpage. I have been able to command the
> Microsourch Synth up to 11.950 Ghz. When I try to go beyond 12 Ghz
it
> will not accept the command. Has anyone else tried this?
>
> I aslo stated above that the default frequency of my unit was 12.5
> GHz this is incorrect,the dafault frequency is 12.0 Ghz.
>
> 73 Gary VK2KYP
>
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> --- In 24GHzHam@yahoogroups.com, "Gary VK2KYP" <gbeech@> wrote:
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> > Hi Piet,
> > I carried out some tests with my unit on the weekend.
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you
> > can download from his website.
> >
> > I have modified this slightly and programmed a PIC, I hope to try
> > this soon.
> >
> > 73 Gary VK2KYP
> >

> >
> > --- In 24GHzHam@yahoogroups.com, "pa0vtw" <pa0vtw@> wrote:
> > >
> > > --- In 24GHzHam@yahoogroups.com, "Gary VK2KYP" <gbeech@> wrote:
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> > > > Have you made any progress with your microsource oscillator.
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> > > > I am about to look at mine again.
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> > > > 73 Gary VK2KYP
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> > > > > Hi Piet,
> > > > > My oscillator is a
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> > > > > Microsource SNP101341001
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> > > > >
> > > > > I think this is the same as yours.
> > > > >
> > > > > regards Gary
> > > > >
> > >
> > >
> > > hello Gary
> > > I have´t look at my, but i found sam info
> > > on internet from Elcom that are the same boxes
> > > as wat wi have
> > > we neat samone ho has the nohou to program that device
> > > > >i will put the info from Elcom in my photo box
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> > > regards Piet PA0VTW
> > > > > --- In 24GHzHam@yahoogroups.com, "pa0vtw" <pa0vtw@> wrote:
> > > > > >
> > > > > > Hi Gary
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> > > > > > my module has a 15 pin connector
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> > > > > > then you see my module,it has a
> > > > > > pic prosessor in it the number is 16c72a
> > > > > >
> > > > > >
> > > > > > 73`Piet
> > > > > >
> > > > >
> > > >

> > >
> >
>

291. Clarify - RX enable mod?

Yahoo group: 24GHzHam
Date: 2008-09-16 21:31:23 UTC
From: wayne_kh6wz
Topic: 291 Message: 291

OK, I performed the TX enable mod, exactly as Joe did this, but I want to add a P-FET to the RX sense to enable a "Ground to RX" function. It is not clear where the Drain and Source pins on the transistor would go after removing the RX sense chip resistor - - or does it not matter where D and S goes, and we can just solder the transistor terminals to either end of the resistor pads, and the Gate would go to the center pin ot the LT1083 via a resistor, just like the TX mod???

Please use Joe's photo in the Photos section for reference.

Thanks. . . new 24GHz rig soon at KH6WZ.

wayne KH6WZ

292. Re: [24GHzHam] Clarify - RX enable mod?

Yahoo group: 24GHzHam
Date: 2008-09-16 22:17:11 UTC
From: Frank Kelly
Topic: 291 Message: 292

Hi Wayne,
I don't have the answer for you here at my office, but consider only switching the TX. That's how I run mine.
These units were made to duplex so there is no fear of RX burnout, and since most of your operation is in RX mode anyway, I'm not sure there is even a power saving issue.
Frank WB6CWN

wayne_kh6wz wrote:
>
> OK, I performed the TX enable mod, exactly as Joe did this, but I want
> to add a P-FET to the RX sense to enable a "Ground to RX" function. It
> is not clear where the Drain and Source pins on the transistor would
> go after removing the RX sense chip resistor - - or does it not matter
> where D and S goes, and we can just solder the transistor terminals to
> either end of the resistor pads, and the Gate would go to the center
> pin ot the LT1083 via a resistor, just like the TX mod???
>
> Please use Joe's photo in the Photos section for reference.
>
> Thanks. . . new 24GHz rig soon at KH6WZ.
>
> wayne KH6WZ
>
>

293. Re: [24GHzHam] Clarify - RX enable mod?

Yahoo group: 24GHzHam
Date: 2008-09-17 01:45:12 UTC
From: Miguel Ramirez
Topic: 291 Message: 293

congrats!! Wayne...outstanding!! work,,

--- On Tue, 9/16/08, wayne_kh6wz <wayne_kh6wz@...> wrote:
From: wayne_kh6wz <wayne_kh6wz@...m>
Subject: [24GHzHam] Clarify - RX enable mod?
To: 24GHzHam@...m
Date: Tuesday, September 16, 2008, 2:31 PM

OK, I performed the TX enable mod, exactly as Joe did this, but I want

to add a P-FET to the RX sense to enable a "Ground to RX" function. It

is not clear where the Drain and Source pins on the transistor would

go after removing the RX sense chip resistor - - or does it not matter

where D and S goes, and we can just solder the transistor terminals to

either end of the resistor pads, and the Gate would go to the center

pin ot the LT1083 via a resistor, just like the TX mod???

Please use Joe's photo in the Photos section for reference.

Thanks. . . new 24GHz rig soon at KH6WZ.

wayne KH6WZ

294. Drain and Source connections for RX mod - Re: Clarify - RX enable mod?

Yahoo group: 24GHzHam
Date: 2008-09-18 17:34:23 UTC
From: wayne_kh6wz
Topic: 291 Message: 294

Frank -
Thanks. I will consider this as I build my unit.

Meanwhile, Dick WB6DNX said he switches both RX and TX, and does see a bit of current savings. Here are the connections, from Dick's notes:

Reference using the TX/RX switching photo posted on the Photos section. where the DC connector is on the left:

After removing the 0.1 Ohm chip resistor for the "RX Enable" mod, the Source terminal on the P-CH MOSFET goes to the left-side resistor pad (plus 5.5V) and the Drain goes to the right side (RX "load" side).

Then, the Gate terminal is connected to the center terminal of the LT1083 via a resistor (10k) and a wire is brought out of the unit to provide a "ground to RX" function. (Similar to the TX-enable mod.)

Thanks for the assist. Now need to tune that pesky filter. . .

Wayne KH6WZ

--- In 24GHzHam@yahoogroups.com, Frank Kelly <fm.kelly@...> wrote:
>
> Hi Wayne,
> I don't have the answer for you here at my office, but consider only
> switching the TX. That's how I run mine.
> These units were made to duplex so there is no fear of RX burnout, and
> since most of your operation is in RX mode anyway, I'm not sure there is
> even a power saving issue.
> Frank WB6CWN
>
>
> wayne_kh6wz wrote:
> >
> > OK, I performed the TX enable mod, exactly as Joe did this, but I want
> > to add a P-FET to the RX sense to enable a "Ground to RX" function. It
> > is not clear where the Drain and Source pins on the transistor would
> > go after removing the RX sense chip resistor - - or does it not matter

> > where D and S goes, and we can just solder the transistor terminals to
> > either end of the resistor pads, and the Gate would go to the center
> > pin ot the LT1083 via a resistor, just like the TX mod???
> >
> > Please use Joe's photo in the Photos section for reference.
> >
> > Thanks. . . new 24GHz rig soon at KH6WZ.
> >
> > wayne KH6WZ
> >
> >
>

295. Re: [24GHzHam] Drain and Source connections for RX mod - Re: Clarify - RX enable mod?

Yahoo group: 24GHzHam
Date: 2008-09-18 19:26:22 UTC
From: mike Kana
Topic: 291 Message: 295

Greetings

Does anyone have the email for Kerry N6IZW? I wanted to inquire
about some Qualcomm surplus board availability.

Thanks
Mike
AA9IL

--- On Thu, 9/18/08, wayne_kh6wz <wayne_kh6wz@...> wrote:
From: wayne_kh6wz <wayne_kh6wz@...>
Subject: [24GHzHam] Drain and Source connections for RX mod - Re: Clarify - RX enable mod?
To: 24GHzHam@yahoogroups.com
Date: Thursday, September 18, 2008, 12:34 PM

Frank -

Thanks. I will consider this as I build my unit.

Meanwhile, Dick WB6DNX said he switches both RX and TX, and does see

a bit of current savings. Here are the connections, from Dick's

notes:

Reference using the TX/RX switching photo posted on the Photos

section. where the DC connector is on the left:

After removing the 0.1 Ohm chip resistor for the "RX Enable" mod,

the Source terminal on the P-CH MOSFET goes to the left-side

resistor pad (plus 5.5V) and the Drain goes to the right side

(RX "load" side).

Then, the Gate terminal is connected to the center terminal of the

LT1083 via a resistor (10k) and a wire is brought out of the unit to

provide a "ground to RX" function. (Similar to the TX-enable mod.)

Thanks for the assist. Now need to tune that pesky filter. . .

Wayne KH6WZ

--- In 24GHzHam@yahoogroup s.com, Frank Kelly <fm.kelly@.. .> wrote:

>

> Hi Wayne,

> I don't have the answer for you here at my office, but consider

only

> switching the TX. That's how I run mine.

> These units were made to duplex so there is no fear of RX burnout,

and

> since most of your operation is in RX mode anyway, I'm not sure

there is

> even a power saving issue.

> Frank WB6CWN

>

>

> wayne_kh6wz wrote:

> >

> > OK, I performed the TX enable mod, exactly as Joe did this, but

I want

> > to add a P-FET to the RX sense to enable a "Ground to RX"

function. It

> > is not clear where the Drain and Source pins on the transistor

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> > go after removing the RX sense chip resistor - - or does it not

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> > where D and S goes, and we can just solder the transistor

terminals to

> > either end of the resistor pads, and the Gate would go to the

center

> > pin ot the LT1083 via a resistor, just like the TX mod???

> >

> > Please use Joe's photo in the Photos section for reference.

> >

> > Thanks. . . new 24GHz rig soon at KH6WZ.

> >

> > wayne KH6WZ

> >

> >

>

296. RE: [24GHzHam] Drain and Source connections for RX mod - Re: Clarify - RX enable mod?

Yahoo group: 24GHzHam
Date: 2008-09-18 19:39:01 UTC
From: Dave Glawson
Topic: 291 Message: 296

Mike,

Kerry can be reached at: kbanke@....

Thanks,

Dave - WA6CGR

From: 24GHzHam@yahoogroups.com [mailto:24GHzHam@yahoogroups.com] On Behalf Of mike Kana
Sent: Thursday, September 18, 2008 12:26 PM
To: 24GHzHam@yahoogroups.com
Subject: Re: [24GHzHam] Drain and Source connections for RX mod - Re: Clarify - RX enable mod?

Greetings

Does anyone have the email for Kerry N6IZW? I wanted to inquire about some Qualcomm surplus board availability.

Thanks
Mike
AA9IL

--- On Thu, 9/18/08, wayne_kh6wz <wayne_kh6wz@...> wrote:

From: wayne_kh6wz <wayne_kh6wz@...>
Subject: [24GHzHam] Drain and Source connections for RX mod - Re: Clarify - RX enable mod?
To: 24GHzHam@yahoogroups.com
Date: Thursday, September 18, 2008, 12:34 PM

Frank -
Thanks. I will consider this as I build my unit.

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Reference using the TX/RX switching photo posted on the Photos section. where the DC connector is on the left:

After removing the 0.1 Ohm chip resistor for the "RX Enable" mod, the Source terminal on the P-CH MOSFET goes to the left-side resistor pad (plus 5.5V) and the Drain goes to the right side (RX "load" side).

Then, the Gate terminal is connected to the center terminal of the LT1083 via a resistor (10k) and a wire is brought out of the unit to provide a "ground to RX" function. (Similar to the TX-enable mod.)

Thanks for the assist. Now need to tune that pesky filter. . .

Wayne KH6WZ

--- In 24GHzHam@yahoogroup <mailto:24GHzHam%40yahoogroups.com> s.com, Frank Kelly <fm.kelly@.. .> wrote:
>
> Hi Wayne,
> I don't have the answer for you here at my office, but consider only
> switching the TX. That's how I run mine.
> These units were made to duplex so there is no fear of RX burnout, and
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> Frank WB6CWN
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> > to add a P-FET to the RX sense to enable a "Ground to RX" function. It
> > is not clear where the Drain and Source pins on the transistor would
> > go after removing the RX sense chip resistor - - or does it not matter
> > where D and S goes, and we can just solder the transistor terminals to
> > either end of the resistor pads, and the Gate would go to the center
> > pin ot the LT1083 via a resistor, just like the TX mod???
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> > Please use Joe's photo in the Photos section for reference.
> >
> > Thanks. . . new 24GHz rig soon at KH6WZ.
> >
> > wayne KH6WZ
> >
> >
>

297. other 20 ghz

Yahoo group: 24GHzHam
Date: 2008-09-20 01:12:52 UTC
From: kc0zhf
Topic: 297 Message: 297

hi, i have got an DMC 23 (harris\stratex)transverter on the way and was looking for any info that some of you my have,
it looks like it would be a good 24ghz it is currently got 21.475.0tx & 22.675.0 rx i am not shure if the if's or of it is 24v/12v yet i will put some pic's in the photo
section to jog someones memory

298. RE: [24GHzHam] other 20 ghz

Yahoo group: 24GHzHam
Date: 2008-09-20 02:13:06 UTC
From: Randy Bynum
Topic: 297 Message: 298

These are fine for 24 GHz. The DRO will generally just make it high enough in frequency to use a 144 IF. A 440 If is better. After about 15 minutes of operation the DRO is stable enough for wideband FM operation. Narrow Band FM might be an issue for even a short contact. SSB and CW is out of the question. Some work has been done by others to lock the DRO but it was a struggle. You should purchase another one so you have a pair. Several parts in the box are of no real value. I don't recall right now but I think you can run everything from a 12 VDC source. I think the DRO actually runs on 8 VDC. A spectrum analyzer is almost, but not quite, a must to get these going. The filter is much easier to move up to 24 GHz with an analyzer. A frequency counter, or a receiver that is fairly accurate is a must to set the DRO to the correct L.O. frequency. These are full duplex as designed and I have not looked at the filter curve to see if it could be with a 440 IF. 1296 would also be a great IF and make life a bit easier. Duplex then should be OK.

When it arrives let me know and I will dig out my note and pass them along.

73,

Randy Bynum, NR6CA

160 meters - 80 GHz plus laser

Reno, NV DM09cj & Soda Springs, CA CM97tj

<http://www.nr6ca.org/> http://www.nr6ca.org

From: 24GHzHam@yahoogroups.com [mailto:24GHzHam@yahoogroups.com] On Behalf Of kc0zhf
Sent: Friday, September 19, 2008 6:13 PM
To: 24GHzHam@yahoogroups.com
Subject: [24GHzHam] other 20 ghz

hi, i have got an DMC 23 (harris\stratex)transverter on the way and was looking for any info that some of you my have,
it looks like it would be a good 24ghz it is currently got 21.475.0tx & 22.675.0 rx i am not shure if the if's or of it is 24v/12v yet i will put some pic's in the photosection to jog someones memory

299. Re: other 20 ghz

Yahoo group: 24GHzHam
Date: 2008-09-21 07:30:51 UTC
From: kc0zhf
Topic: 297 Message: 299

hi, thanks for the advise, i have some of the needed test equiptment
and with some coning i could get the others, i will let you know
i have some moding under my belt so other than the DRO it might not
be to bad??
Rodney

--- In 24GHzHam@yahoogroups.com, "Randy Bynum" <nr6ca@...> wrote:
>
> These are fine for 24 GHz. The DRO will generally just make it high
enough
> in frequency to use a 144 IF. A 440 If is better. After about 15
minutes of
> operation the DRO is stable enough for wideband FM operation.
Narrow Band FM
> might be an issue for even a short contact. SSB and CW is out of the
> question. Some work has been done by others to lock the DRO but it
was a
> struggle. You should purchase another one so you have a pair.
Several parts
> in the box are of no real value. I don't recall right now but I
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> can run everything from a 12 VDC source. I think the DRO actually
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> VDC. A spectrum analyzer is almost, but not quite, a must to get
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> frequency counter, or a receiver that is fairly accurate is a must
to set
> the DRO to the correct L.O. frequency. These are full duplex as
designed and
> I have not looked at the filter curve to see if it could be with a
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> 1296 would also be a great IF and make life a bit easier. Duplex
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> be OK.
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>
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> Randy Bynum, NR6CA
>
> 160 meters - 80 GHz plus laser
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> Reno, NV DM09cj & Soda Springs, CA CM97tj
>
> <http://www.nr6ca.org/> http://www.nr6ca.org
>
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> From: 24GHzHam@yahoogroups.com [mailto:24GHzHam@yahoogroups.com] On
Behalf
> Of kc0zhf
> Sent: Friday, September 19, 2008 6:13 PM
> To: 24GHzHam@yahoogroups.com
> Subject: [24GHzHam] other 20 ghz
>
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>
> hi, i have got an DMC 23 (harris\stratex)transverter on the way and
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will
> put some pic's in the photosection to jog someones memory
>

300. Re: other 20 ghz

Yahoo group: 24GHzHam
Date: 2008-09-23 21:22:10 UTC
From: kc0zhf
Topic: 297 Message: 300

got the unit to day, and there was no sign of any thing wrong,
i have a duelband or "A 440 If is better" ham radio ready to feed the
unit,i am ready for any info you may have or advise,
thanks
Rodney

--- In 24GHzHam@yahoogroups.com, "kc0zhf" <kc0zhf@...> wrote:
>
> hi, thanks for the advise, i have some of the needed test equiptment
> and with some coning i could get the others, i will let you know
> i have some moding under my belt so other than the DRO it might not
> be to bad??
> Rodney
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> --- In 24GHzHam@yahoogroups.com, "Randy Bynum" <nr6ca@> wrote:
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> Several parts
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> > the DRO to the correct L.O. frequency. These are full duplex as
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> > I have not looked at the filter curve to see if it could be with
a
> 440 IF.
> > 1296 would also be a great IF and make life a bit easier. Duplex
> then should
> > be OK.
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> > When it arrives let me know and I will dig out my note and pass
> them along.
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> >
> > 73,
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> >
> > Randy Bynum, NR6CA
> >
> > 160 meters - 80 GHz plus laser
> >
> > Reno, NV DM09cj & Soda Springs, CA CM97tj
> >
> > <http://www.nr6ca.org/> http://www.nr6ca.org
> >
> >
> >
> >
> >
> > From: 24GHzHam@yahoogroups.com [mailto:24GHzHam@yahoogroups.com]
On
> Behalf
> > Of kc0zhf
> > Sent: Friday, September 19, 2008 6:13 PM
> > To: 24GHzHam@yahoogroups.com
> > Subject: [24GHzHam] other 20 ghz
> >
> >
> >
> > hi, i have got an DMC 23 (harris\stratex)transverter on the way
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> > looking for any info that some of you my have,
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> 21.475.0tx &
> > 22.675.0 rx i am not shure if the if's or of it is 24v/12v yet i
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> > put some pic's in the photosection to jog someones memory
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>

301. RE: [24GHzHam] Re: other 20 ghz

Yahoo group: 24GHzHam
Date: 2008-09-25 01:57:47 UTC
From: Randy Bynum
Topic: 297 Message: 301

Rodney,

I do not have anything written up about the DMC units. I have spent a lot of time familiarizing myself with them and I could go to my lab and start putting things together but it would be trial and error. I have hooked the DRO output into the spectrum analyzer and frequency counter to tune it. Beyond that I have not done a great deal of work, but again, I have nothing in a file that I could send you anyway. If you truly want to build a transceiver from this building block your best bet is to acquire a second unit as the RX mixer can be modified to use as a TX mixer. That is the very best way to go since the DRO generates the TX frequency directly and feeds the modulator which in turn goes to the antenna through a diplexer.

One thing I have not done is a long term drift analysis to see if narrow band FM would even work. I earlier mentioned wide band FM. Does your 440 radio do wide band FM? If you have a 24 GHz signal source, and the ability to look at 24 GHz on an analyzer, you could remove the filter and retune it to 24.192 MHz.

In general the are two parts of the cube. One side has the DRO, LNA, RX mixer, TX modulator filter, and a few other parts. Save all of that. On the other side are two PC boards that have no real value for amateur use. There are some DC power supply parts on one board and an RX board for a 1.2 GHz IF. Basically scrap for our applications though the IF board might have some value as an IF amplifier but there are better ways to go.

That is the best I can do for you right now. Sorry I can't be of more help. Having a complete 24 GHz narrow band system already, this project is certainly a future one. One day I will get around to building a pair of transceivers and writing them up. But I will use a 1296 IF, which is ideal, though 440 will work well for you, but again you need a second mixer. I worked with the seller and after buying one from them I bought 3 more for a lower per unit price and shipping of the three at only a few dollars more than the cost of shipping one. From the four units I'll be able to build two complete transceivers for contest use. If I can phase lock them I can do narrow band modes like SSB.

Someday...

73,

Randy Bynum, NR6CA

160 meters - 80 GHz plus laser

Reno, NV DM09cj & Soda Springs, CA CM97tj

<http://www.nr6ca.org/> http://www.nr6ca.org

From: 24GHzHam@yahoogroups.com [mailto:24GHzHam@yahoogroups.com] On Behalf Of kc0zhf
Sent: Tuesday, September 23, 2008 2:22 PM
To: 24GHzHam@yahoogroups.com
Subject: [24GHzHam] Re: other 20 ghz

got the unit to day, and there was no sign of any thing wrong,
i have a duelband or "A 440 If is better" ham radio ready to feed the unit,i am ready for any info you may have or advise,
thanks
Rodney

--- In 24GHzHam@yahoogroups.com <mailto:24GHzHam%40yahoogroups.com> , "kc0zhf" <kc0zhf@...> wrote:
>
> hi, thanks for the advise, i have some of the needed test equiptment
> and with some coning i could get the others, i will let you know
> i have some moding under my belt so other than the DRO it might not
> be to bad??
> Rodney
>

302. Re: other 20 ghz

Yahoo group: 24GHzHam
Date: 2008-09-25 03:54:57 UTC
From: kc0zhf
Topic: 297 Message: 302

"transceiver from this building block your best bet is to acquire a
second unit as the RX mixer can be modified to use as a TX mixer.
That is the very best way to go since the DRO generates the TX
frequency directly and feeds the modulator which in turn goes to the
antenna through a diplexer".

i could try to get a second one?

"I earlier mentioned wide band FM. Does your 440
radio do wide band FM?"

yes i have two radio that i can do WFM (old fm)

"If you have a 24 GHz signal source, and the ability
to look at 24 GHz on an analyzer, you could remove the filter and
retune it to 24.192 MHz".

yes i can do this with a litte help,
what is the best way to remove it and tune it??

"In general the are two parts of the cube. One side has the DRO, LNA,
RX mixer, TX modulator filter, and a few other parts. Save all of
that."

yes i have opened it up to check things out.

"But I will use a 1296 IF, which is ideal, though 440 will work well
for you, but again you need a second mixer."

if i get a second mixer what should that be tuned to get the 440??
to i could get a 1296 IF sorce would the second mixer be tuned to??
i have some of a working understanind but i am knid of on my own
the nearest person that is interseted in this type of thing is 200
miles away any other help would be of great help ???
thanks Rodney

303. Re: other 20 ghz

Yahoo group: 24GHzHam
Date: 2008-09-25 04:00:41 UTC
From: kc0zhf
Topic: 297 Message: 303

"transceiver from this building block your best bet is to acquire a second unit as the RX mixer can be modified to use as a TX mixer. That is the very best way to go since the DRO generates the TX frequency directly and feeds the modulator which in turn goes to the antenna through a diplexer".

i could try to get a second one?

"I earlier mentioned wide band FM. Does your 440 radio do wide band FM?"

yes i have two radio that i can do WFM (old fm)

"If you have a 24 GHz signal source, and the ability to look at 24 GHz on an analyzer, you could remove the filter and retune it to 24.192 MHz".

yes i can do this with a litte help,
what is the best way to remove it and tune it??

"In general the are two parts of the cube. One side has the DRO, LNA, RX mixer, TX modulator filter, and a few other parts. Save all of that."

yes i have opened it up to check things out.

"But I will use a 1296 IF, which is ideal, though 440 will work well for you, but again you need a second mixer."

if i get a second mixer what should that be tuned to get the 440??
to i could get a 1296 IF sorce would the second mixer be tuned to??
i have some of a working understanind but i am knid of on my own
the nearest person that is interseted in this type of thing is 200 miles away any other help would be of great help ???
thanks Rodney

304. New file uploaded to 24GHzHam

Yahoo group: 24GHzHam
Date: 2008-10-05 14:53:46 UTC
From: 24GHzHam@yahoogroups.com
Topic: 31 Message: 304

Hello,

This email message is a notification to let you know that
a file has been uploaded to the Files area of the 24GHzHam
group.

File : /24Ghz filter is nou a waveguide switch
Uploaded by : pa0vtw <pa0vtw@...>
Description : 4 photo?s in my gallery pa0vtw

You can access this file at the URL:
http://groups.yahoo.com/group/24GHzHam/files/24Ghz%20filter%20is%20nou%20a%20waveguide%20switch

To learn more about file sharing for your group, please visit:
http://help.yahoo.com/l/us/yahoo/groups/original/members/web/index.htmlfiles

Regards,

pa0vtw <pa0vtw@...>

305. Modifying 'old' 24GHz gear

Yahoo group: 24GHzHam
Date: 2008-10-23 07:40:06 UTC
From: David Ackrill
Topic: 305 Message: 305

A friend of mine has bought up a box of bits from a local junk sale and one of the bits was a 144MHz/24GHz transverter unit. I'll post pictures in the photos area later with a suitable name, something like 'old 24GHz transverter'.

Looking on the website of Peter (G3PHO) it looks like one that used to be owned by G4BYV and it seems to be an older DB6NT design. It might be on 24192MHz rather than the 24048MHz that more modern units are now set up for. However, the higher frequencies are still inside the UK allocation for Amateur Radio, of course.

I've emailed Peter (G3PHO), who lives not far away, to see if he can help me test the unit and confirm the frequency range that it's operating on. One of the 1st jobs is to confirm which way round the coaxial switch needs to be for TX and RX, as several people at the radio club had been turnng the knob before I got to the there last night...

The next question, assuming it is still working and is on 24192MHz, is can it be modified for 24048MHz?

I suspect that might involve a new LO board for 11952MHz instead of 12024MHz as a minimum.

If it is too difficult to modify I might try and make up something for the 'old' part of the band so that he and I, at least, can work one another.

Thanks for any help or advice on this unit.

Cheers - Dave (G0DJA)

306. Source of Endwave units? from WI6M

Yahoo group: 24GHzHam
Date: 2009-04-21 13:30:07 UTC
From: Rod Adkins
Topic: 306 Message: 306

Any more Endwave units available?

Source?

Kerry & Ed showed progress on an Endwave unit at last nights meeting of SDMG, & a few members expressed interest

Rod Adkins WI6M

307. Re: [24GHzHam] Source of Endwave units? from WI6M

Yahoo group: 24GHzHam
Date: 2009-04-21 14:48:21 UTC
From: kb7dqh@donobi.net
Topic: 306 Message: 307

> Any more Endwave units available?
>
> Source?
>
> Kerry & Ed showed progress on an Endwave unit at last nights meeting of
> SDMG, & a few members expressed interest
>
>
> Rod Adkins WI6M

Dunno... Mine has the "blown post-mixer amplifier" issue and would be cool to use it for parts or a second receiver, or, if I could find 20dB of gain someplace I could use the anemic TX mixer output to drive the 1W PA and use it
as it sits!

Eric
KB7DQH

308. Re: [24GHzHam] Source of Endwave units? from WI6M

Yahoo group: 24GHzHam
Date: 2009-04-21 14:59:20 UTC
From: Zack Widup
Topic: 306 Message: 308

There was a ham in England who once said he had a bunch of the Endwave units (I think) that he was going to sell on eBay. His eBay name is "proper-radios". I have yet to see any 24 GHz units offered there yet, though!

73, Zack W9SZ

On Tue, Apr 21, 2009 at 9:48 AM, <kb7dqh@...> wrote:

```
>
>
> > Any more Endwave units available?
> >
> > Source?
> >
> > Kerry & Ed showed progress on an Endwave unit at last nights meeting of
> > SDMG, & a few members expressed interest
> >
> >
> > Rod Adkins WI6M
>
> Dunno... Mine has the "blown post-mixer amplifier" issue and would be cool
> to use it for parts or a second receiver, or, if I could find 20dB of gain
> someplace I could use the anemic TX mixer output to drive the 1W PA and
> use it
> as it sits!
>
> Eric
> KB7DQH
>
>
>
```

309. Re: [24GHzHam] Source of Endwave units? from WI6M

Yahoo group: 24GHzHam
Date: 2009-04-21 15:46:43 UTC
From: w0eom@aol.com
Topic: 306 Message: 309

Does someone have a photo? i am not sure which Endwave unit this is.

Will

In a message dated 4/21/2009 6:30:39 A.M. Pacific Daylight Time,
adkins92rod@... writes:

Any more Endwave units available?

Source?

Kerry & Ed showed progress on an Endwave unit at last nights meeting of
SDMG, & a few members expressed interest

Rod Adkins WI6M

_Messages in this topic _
(http://groups.yahoo.com/group/24GHzHam/message/306;_ylc=X3oDMTMzMzhjZGhmBF9TAzk3MzU5NzE0B
GdycElkAzE5NjIwMDg2BGdycHNwSWQDMTcw
NTA2MzEwOARtc2dJZAMzMDYEc2VjA2Z0cgRzbGsDdnRwYwRzdGltZQMxMjQwMzIwNjExBHRwY0lk
AzMwNg--) (1) _Reply (via web post) _
(http://groups.yahoo.com/group/24GHzHam/post;_ylc=X3oDMTJwZG5mMGQxBF9TAzk3MzU5NzE0BGdycElk
AzE5NjIwMDg2BGdycHNwSWQ
DMTcwNTA2MzEwOARtc2dJZAMzMDYEc2VjA2Z0cgRzbGsDcnBseQRzdGltZQMxMjQwMzIwNjEx?ac
t=reply&messageNum=306) | _Start a new topic _
(http://groups.yahoo.com/group/24GHzHam/post;_ylc=X3oDMTJmZTAycjljBF9TAzk3MzU5NzE0BGdycElk
AzE5NjIwMDg2BG
dycHNwSWQDMTcwNTA2MzEwOARzZWMDZnRyBHNsawNudHBjBHN0aW1lAzEyNDAzMjA2MTE-)
Messages
(http://groups.yahoo.com/group/24GHzHam/messages;_ylc=X3oDMTJmN21yaHQ5BF9TAzk3MzU5NzE0BGdy
cElkAzE5NjIwMDg2BGdycHNwSWQDMTcwNTA2MzEwOARzZWMDZnR
yBHNsawNtc2dzBHN0aW1lAzEyNDAzMjA2MTE-) | _Files_
(http://groups.yahoo.com/group/24GHzHam/files;_ylc=X3oDMTJnZzNoa3A0BF9TAzk3MzU5NzE0BGdycEl
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g2BGdycHNwSWQDMTcwNTA2MzEwOARzZWMDZnRyBHNsawNmaWxlcwRzdGltZQMxMjQwMzIwNjEx)
| _Photos_
(http://groups.yahoo.com/group/24GHzHam/photos;_ylc=X3oDMTJmbGVqcWd0BF9TAzk3MzU5NzE0BGdycE
lkAzE5NjIwMDg2BGdycHNwSWQDMTcwNTA2MzEwOARzZWMDZnR
yBHNsawNwaG90BHN0aW1lAzEyNDAzMjA2MTE-) | _Links_
(http://groups.yahoo.com/group/24GHzHam/links;_ylc=X3oDMTJnbjYycWQ4BF9TAzk3MzU5NzE0BGdycEl
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| _Database_
(http://groups.yahoo.com/group/24GHzHam/database;_ylc=X3oDMTJkYjU0MTJzBF9TAzk3MzU5NzE0BGdy
cElkAzE5NjIwMDg2BGdycHNwSWQDMTcwNTA2MzEwOARzZWM
DZnRyBHNsawNkYgRzdGltZQMxMjQwMzIwNjEx) | _Polls_
(http://groups.yahoo.com/group/24GHzHam/polls;_ylc=X3oDMTJnYzZubGJuBF9TAzk3MzU5NzE0BGdycEl

kAzE5NjIwMD
g2BGdycHNwSWQDMTcwNTA2MzEwOARzZWMDZnRyBHNsawNwb2xscwRzdGltZQMxMjQwMzIwNjEx)
| _Members_
(http://groups.yahoo.com/group/24GHzHam/members;_ylc=X3oDMTJmZ3VrcjFhBF9TAzk3MzU5NzE0BGdyc
ElkAzE5NjIwMDg2BGdycHNwSWQDMTcwNTA2MzEwOARzZWMDZ
nRyBHNsawNtYnJzBHN0aW1lAzEyNDAzMjA2MTE-) | _Calendar_
(http://groups.yahoo.com/group/24GHzHam/calendar;_ylc=X3oDMTJldmpwMHE3BF9TAzk3MzU5NzE0BGdy
cElkAz
E5NjIwMDg2BGdycHNwSWQDMTcwNTA2MzEwOARzZWMDZnRyBHNsawNjYWwEc3RpbWUDMTI0MDMyMD
YxMQ--)

MARKETPLACE

_I'm happy I lost my Job. Now I make $12,000/mo online! See how I do it:
WealthResource.org._
(http://us.ard.yahoo.com/SIG=14k1u0cc2/M=733250.13416488.13509112.10835568/D=groups/S=1705
063108:MKP1/Y=YAHOO/EXP=1240327811/L=/B=W5
8vBUPDhFY-/J=1240320611375243/K=2Gde0V6tfGDpAxBw7KOo2A/A=5687713/R=0/SIG=12e
cgaa63/*http://www.socialtrack.net/redir.aspx?CID=18601&AFID=43106&DID=81069
&SID=ad2)

_____

_Mom Power: Discover the community of moms doing more for their families,
for the world and for each other_
(http://us.ard.yahoo.com/SIG=14kidrdu4/M=493064.12016295.13271503.10835568/D=groups/S=1705
063108:MKP1/Y=YAHOO/EXP=1240
327811/L=/B=XJ8vBUPDhFY-/J=1240320611375243/K=2Gde0V6tfGDpAxBw7KOo2A/A=56973
81/R=0/SIG=11eaa5dke/*http://groups.yahoo.com/group/mompowergroup/)

(http://groups.yahoo.com/;_ylc=X3oDMTJlYzNwampyBF9TAzk3NDc2NTkwBGdycElkAzE5NjIwMDg2BGdycHN
wSWQDMTcwNTA2MzEwOARzZWMDZnRyBHNsawNnZnAEc3RpbWUDMTI0MDMyMDYx
MQ--)
Change settings via the Web
(http://groups.yahoo.com/group/24GHzHam/join;_ylc=X3oDMTJnMDNuOWluBF9TAzk3NDc2NTkwBGdycElk
AzE5NjIwMDg2BGdycHNwSWQDMTcwNTA
2MzEwOARzZWMDZnRyBHNsawNzdG5ncwRzdGltZQMxMjQwMzIwNjEx) (Yahoo! ID
required)
Change settings via email: _Switch delivery to Daily Digest_
(mailto:24GHzHam-digest@yahoogroups.com?subject=Email Delivery: Digest) | _Switch
format to Traditional_
(mailto:24GHzHam-traditional@yahoogroups.com?subject=Change Delivery Format: Traditional)
_Visit Your Group _
(http://groups.yahoo.com/group/24GHzHam;_ylc=X3oDMTJlY3Zwa3Q5BF9TAzk3NDc2NTkwBGdycElkAzE5N
jIwMDg2BGdycHNwSWQDMTcwNTA2MzEwOARzZWMDZn
RyBHNsawNocGYEc3RpbWUDMTI0MDMyMDYxMQ--) | _Yahoo! Groups Terms of Use _
(http://docs.yahoo.com/info/terms/) | _Unsubscribe _
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New Members
(http://groups.yahoo.com/group/24GHzHam/members;_ylc=X3oDMTJnOWJ2NjU5BF9TAzk3MzU5NzE0BGdyc

ElkAzE5NjIwMDg2BGdycHNwSWQDMTcwNTA2MzEwOARzZWMD
dnRsBHNsawN2bWJycwRzdGltZQMxMjQwMzIwNjEx)

_Visit Your Group _
(http://groups.yahoo.com/group/24GHzHam;_ylc=X3oDMTJmN2hwa2c4BF9TAzk3MzU5NzE0BGdycElkAzE5N
jIwMDg2BGdycHNwSWQDMTcwNTA2MzEwOARzZWMDdn
RsBHNsawN2Z2hwBHN0aW1lAzEyNDAzMjA2MTE-)

Sell Online
Start selling with
(http://us.ard.yahoo.com/SIG=14hv847q6/M=493064.12016255.12445662.8674578/D=groups/S=17050
63108:NC/Y=YAHOO/EXP=1240327811/L=/B=XZ8
vBUPDhFY-/J=1240320611375243/K=2Gde0V6tfGDpAxBw7KOo2A/A=4025291/R=0/SIG=12bs
apn24/*http://us.rd.yahoo.com/evt=44092/*http://smallbusiness.yahoo.com/merc
hant)
our award-winning
e-commerce tools.

Yahoo! Groups
Auto Enthusiast Zone
(http://us.ard.yahoo.com/SIG=14hc7cdcp/M=493064.12717544.13455789.8674578/D=groups/S=17050
63108:NC/Y=YAHOO/EXP=1240327811/L=/B=X
p8vBUPDhFY-/J=1240320611375243/K=2Gde0V6tfGDpAxBw7KOo2A/A=5658250/R=0/SIG=11
ptgj47g/*http://advision.webevents.yahoo.com/autoenthusiastzone/)
Auto Enthusiast Zone
Car groups and more!

Yahoo! Groups
Mom Power
(http://us.ard.yahoo.com/SIG=14hkdonh1/M=493064.12662709.13497510.8674578/D=groups/S=17050
63108:NC/Y=YAHOO/EXP=1240327811/L=/B=X58vBUPDhFY-
/J=1240320611375243/K=2Gde0V6tfGDpAxBw7KOo2A/A=5689698/R=0/SIG=11eaa5dke/*ht
tp://groups.yahoo.com/group/mompowergroup/)
Kids, family & home
Join the discussion

.

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steps!
(http://pr.atwola.com/promoclk/100126575x1221621490x1201450102/aol?redir=http:%2F%2Fwww.fr
eecreditreport.com%2Fpm%2Fdefault.aspx%3Fsc%3D668072%26
hmpgID%3D62%26bcd%3DAprilfooter421NO62)

310. Where is everybody ?

Yahoo group: 24GHzHam
Date: 2009-05-08 03:46:05 UTC
From: Jose' Francisco
Topic: 310 Message: 310

Hello guys,

Where are the microwavers ?

Where is all the people interested on 24GHz and up ?

Regards and getup microwavers !

Joe//

CT4AN

311. Elcom cdfsl synthesizer

Yahoo group: 24GHzHam
Date: 2009-05-21 18:17:01 UTC
From: g8cub
Topic: 311 Message: 311

Has anyone sucessfully programmed these synths? I see that new units are on ebay from 'art-in-part'. The data sheet looks good!

312. Re: Elcom cdfsl synthesizer

Yahoo group: 24GHzHam
Date: 2009-05-22 14:39:21 UTC
From: ww2r_dave
Topic: 311 Message: 312

No, but from the datasheet it looks to have the same interface requirements as the dfs1201 which i wrote up at http://g4fre.com/dfs1201.htm

Dave

ww2r

--- In 24GHzHam@yahoogroups.com, "g8cub" <g8cub@...> wrote:
>
> Has anyone sucessfully programmed these synths? I see that new units are on ebay from 'art-in-part'. The data sheet looks good!
>

313. Re: Elcom cdfsl synthesizer

Yahoo group: 24GHzHam
Date: 2009-05-22 17:37:25 UTC
From: g8cub
Topic: 311 Message: 313

Dave, Thanks for that, I will have a look. Do you know anyway of telling what step sizes are available? I am using the Alcatel synth for 24GHz (as well as 5.7/10/47G). These look more versatile and possibly lower noise. Roger
--- In 24GHzHam@yahoogroups.com, "ww2r_dave" <ww2r2@...> wrote:
>
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>
> Dave
>
> ww2r
>
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> > Has anyone sucessfully programmed these synths? I see that new units are on ebay from 'art-in-part'. The data sheet looks good!
> >
>

314. Re: Elcom cdfsl synthesizer

Yahoo group: 24GHzHam
Date: 2009-05-23 13:55:14 UTC
From: ww2r_dave
Topic: 311 Message: 314

Not really. The elcom dfs series are a "platform" and what it did was specified when you bought them.

The step has to be 25 or 125 or 500 or 1250 khz or (10/3) or (5/3) MHz. As mentioned in the writeup it took me a long time of trial and error to work out what I had got.

Note that in the 11.2 to 12GHz units , when calculating available frequencies in the equation:-

output freg = n x step size + start freq

start freq isnt necessarily 11.2GHz! This misled me a lot on a unit someone sent me to try

I do still have a couple of dfs1201 on 11880 if anyone is interested

Dave

--- In 24GHzHam@yahoogroups.com, "g8cub" <g8cub@...> wrote:
>
> Dave, Thanks for that, I will have a look. Do you know anyway of telling what step sizes are available? I am using the Alcatel synth for 24GHz (as well as 5.7/10/47G). These look more versatile and possibly lower noise. Roger
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> >
> > ww2r
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> > >
> >
>

315. RE: [24GHzHam] Re: Elcom cdfsl synthesizer

Yahoo group: 24GHzHam
Date: 2009-05-23 15:10:35 UTC
From: Rod Adkins
Topic: 311 Message: 315

Dave, I would like one of the dfs1201 please

Rod Adkins WI6M nr San Diego
17917 Lyons Valley Road
Jamul, CA 91935

----- Original Message -----
From: ww2r_dave
To: 24GHzHam@yahoogroups.com
Sent: 5/23/2009 6:56:11 AM
Subject: [24GHzHam] Re: Elcom cdfsl synthesizer

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> >
> > No, but from the datasheet it looks to have the same interface requirements as the dfs1201 which i wrote up at http://g4fre.com/dfs1201.htm
> >
> > Dave
> >
> > ww2r
> >
> > --- In 24GHzHam@yahoogroups.com, "g8cub" <g8cub@> wrote:
> > >
> > > Has anyone sucessfully programmed these synths? I see that new units are on ebay from 'art-in-part'. The data sheet looks good!

> > >
> >
>

316. "24GHz Ham" user group mission is expanding

Yahoo group: 24GHzHam
Date: 2009-05-23 16:55:21 UTC
From: Frank WB6CWN
Topic: 316 Message: 316

Look for changes coming to this user group!

I am going to put the great collection of Endwave material collected over the past few years into an Endwave specific section and expand the mission of this group to cover all things of interest to 24GHz enthusiasts.

Effective immediately the door is open to the broader topics of 24GHz radio construction, operation and signal propagation.

Think of this group as the 24GHz "calling frequency". Right now we have about 100 "listeners" worldwide, with the potential for many more as we share and learn.

Your Moderator,
Frank WB6CWN
Southern California

317. Re: changes to group

Yahoo group: 24GHzHam
Date: 2009-05-24 11:34:52 UTC
From: Dave Nelson
Topic: 317 Message: 317

Frank,
Outstanding !!!
Although I have been a member of the group for quite some time it was initialy
just following with interest what others were doing with the specified units.
I didnt personally own one.
Expanding to general 24GHz ops. will hopefully open the group to much more
active discussion.

My main interest on that band at the moment is ATV see...
http://www.sydneystormcity.com/atv.htm

see the unit at the bottom of the page for my current Gunn Osc. ATV TX
currently my personal distance record is 76km with a P5 pix :)

my microwave "partners in crime" ;) are Jack VK2TRF and Dan VK2GG who are
both running the same TX units they are prodcing around 60mW and being fed
into
a 38dB gain dish .... see 4 pix just above the Gunn unit, on the page
mentioned above. They are running DB6NT - MKU LNC 24 A, ATV Converter
that comes out
in the Satellite receiver band on 1 - 1.25 GHz.From there into a Synth'ed 23cm
receiver and a LCD A/V monitor as seen in the video clip.

I have been asking Q's in other forums about PIC programming of LMX2325 synth/
PLL chips as I have a Harris 23GHz ODU that I would love to get onto 24GHz
see ...http://www.sydneystormcity.com/24GHz.htm for board photo of TX
unit and
cct diag that I drew out.

OK Frank, there's an intro in to my activities on 24 GHz .... hopefully
it will start
lots of good discussions about other activities :)

Dave Nelson
VK2TDN
www.sydneystormcity.com

>"24GHz Ham" user group mission is expanding
> Posted by: "Frank WB6CWN" fm.kelly@... wb6cwn
> Date: Sat May 23, 2009 9:55 am ((PDT))
>
>Look for changes coming to this user group!
>
>I am going to put the great collection of Endwave material collected over
>the past few years into an Endwave specific section and expand the mission
>of this group to cover all things of interest to 24GHz enthusiasts.
>

>Effective immediately the door is open to the broader topics of 24GHz
>radio construction, operation and signal propagation.
>Think of this group as the 24GHz "calling frequency". Right now we have
>about 100 "listeners" worldwide, with the potential for many more as we
>share and learn.
>Your Moderator,
>Frank WB6CWN
>Southern California

318. My SDH Final died

Yahoo group: 24GHzHam
Date: 2009-07-13 00:52:47 UTC
From: w7glf
Topic: 318 Message: 318

I am curious if anyone has looked carefully at the wire bonding to the PA section. My PA suddenly stopped working and after rechecking drive and voltages (all seemed fine) naturally I took the cover off. What was curious is it looked like there was a tiny blob of melted solder on the main board right where the wire bonds connect to the ALH196C amplifier. I also saw a tiny blob of solder near the connections to the APH328 but it was outside the cover. Before I used a cotton swab to clean those the PA was acting like a unity gain amplifier. After cleaning it up it now passes no power.

I know it is hopeless at this point but what looked like a blob of solder mystifies me. From the experience above it is almost as if it was supposed to be there.

In any case I hope to feed the driver into an external amplifier and at least get back to 80 milliwatts. Very disappointed but the receiver and the driver still work (about 1 milliwatt) so all is not lost.

I am wondering if I can just disconnect the Tx FET to effectively disable PA or whether I need to do more. When I key the FET the amplifier it still draws 2 amps more in transmit than in receive. If I am not going to use it then why source the extra power?

319. NF measured at 4.25dB

Yahoo group: 24GHzHam
Date: 2009-09-01 02:48:38 UTC
From: wb6cwn
Topic: 319 Message: 319

Hello to the Group. Its been quiet lately so I'll use the bandwidth to report the results of a noise figure measurement just made on my 24GHz Endwave transverter: 4.25dB at 24.192GHz.

This measurement was made with a calibrated HP 346C noise head and an AIL system noise monitor.

I used the transverter for the first time in the field in August with
excellent TX results (+30.5dBm out), but with poorer than expected RX performance. The cause of the latter is not clear to me, so I am going through the investigative steps.

4.25dB NF is not terrible at 24GHz, but its not state of the art either. The next effort here will be to look into improving the RX NF, either by modification or with an external preamp. Your experience and/or ideas in this matter are welcome.

I use a 11.880GHz CTI DRO locked to a 55MHz OCXO for the LO chain.
The 423MHz IF radio is an Yaesu FT-817. The Yaesu has just the right amount of LO drive with the 12V power wire disconnected from its internal 5W PA. The signal passing though the PA unamplified exits at -2 to +2dBm, depending on the TX power setting.

See you on the air,
Frank WB6CWN

320. Re: [24GHzHam] NF measured at 4.25dB

Yahoo group: 24GHzHam
Date: 2009-09-01 03:49:03 UTC
From: Zack Widup
Topic: 319 Message: 320

I'm building the 24 GHz modules by Luis CT1DMK. Luis had good luck with the NE32584 devices in his preamp and first power amp. I'm not sure what NF he got with the receive preamp circuit but he said the 3-stage amp run at a little higher current got out 10 mW when driven by his harmonic mixer circuit.
I'm putting all this together and hope to have it done by the September 10+ GHz contest weekend. I'm going to try the NE350184C which wasn't out yet when Luis built them. It is spec'd to beyond 24 GHz and looks promising.

73, Zack W9SZ

On Mon, Aug 31, 2009 at 9:48 PM, wb6cwn <fm.kelly@verizon.net> wrote:

>
>
> Hello to the Group. Its been quiet lately so I'll use the bandwidth to
> report the results of a noise figure measurement just made on my 24GHz
> Endwave transverter: 4.25dB at 24.192GHz.
>
> This measurement was made with a calibrated HP 346C noise head and an AIL
> system noise monitor.
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> I used the transverter for the first time in the field in August with
> excellent TX results (+30.5dBm out), but with poorer than expected RX
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> through the investigative steps.
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> 4.25dB NF is not terrible at 24GHz, but its not state of the art either.
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> The 423MHz IF radio is an Yaesu FT-817. The Yaesu has just the right amount
> of LO drive with the 12V power wire disconnected from its internal 5W PA.
> The signal passing though the PA unamplified exits at -2 to +2dBm, depending
> on the TX power setting.
>
> See you on the air,
> Frank WB6CWN
>
>
>

321. Endwave TXRX and Microsource oscillators

Yahoo group: 24GHzHam
Date: 2009-09-01 03:50:02 UTC
From: vk2kyp
Topic: 321 Message: 321

Hi All, I also noted that traffic has been quite.

I am looking for a Endwave Unit to use on 24 GHz. If you want to dipsose of one please let me know

I have found the Microsource oscillators them to be both stable and reliable. I am using Dave G4fre software for the Elcom 1201s which I have made some minor changes. 73 Gary VK2KYP

322. Re: [24GHzHam] NF measured at 4.25dB

Yahoo group: 24GHzHam
Date: 2009-09-01 15:42:18 UTC
From: Jeffrey Pawlan
Topic: 319 Message: 322

Very interesting! PLEASE describe in detail, preferably with photos and or schematics of how you were able to lock the DRO with an ext osc. I have not found any spot in the DRO to lock it and the crystal is above gnd at both ends.

73

Jeffrey Pawlan WA6KBL

--- On Mon, 8/31/09, wb6cwn <fm.kelly@...> wrote:

From: wb6cwn <fm.kelly@...>
Subject: [24GHzHam] NF measured at 4.25dB
To: 24GHzHam@yahoogroups.com
Date: Monday, August 31, 2009, 7:48 PM

I use a 11.880GHz CTI DRO locked to a 55MHz OCXO for the LO chain.

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323. Re: Re: [24GHzHam] NF measured at 4.25dB

Yahoo group: 24GHzHam
Date: 2009-09-01 17:02:52 UTC
From: Frank Kelly
Topic: 319 Message: 323

I found a few 12GHz CTI-Hurley DROs sometime back and use one of them locked at 11.88GHz? to a 55MHz OCXO.
Unfortunatlely I was unable to find a way to pull the frequency far enough on the stock CTI DRO made for the Endwave transverter.?
Frank WB6CWN

Sep 1, 2009 08:42:35 AM, 24GHzHam@yahoogroups.com wrote:
?

Very interesting!? PLEASE describe in detail, preferably with photos and or schematics of how you were able to lock the DRO with an ext osc.? I have not found any spot in the DRO to lock it and the crystal is above gnd at both ends.

73

Jeffrey Pawlan? WA6KBL

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(http://groups.yahoo.com/;_ylc=X3oDMTJlbXNyNjBpBF9TAzk3MzU5NzE0BGdycElkAzE5NjIwMDg2BGdycHNwSWQDMTcwNTA2MzEwOARzZWMDZnRyBHNsawNnZnAEc3RpbWUDMTI1MTc3MzM2MA--)
I use a 11.880GHz CTI DRO locked to a 55MHz OCXO for the LO chain. (http://groups.yahoo.com/;_ylc=X3oDMTJlbXNyNjBpBF9TAzk3MzU5NzE0BGdycElkAzE5NjIwMDg2BGdycHNwSWQDMTcwNTA2MzEwOARzZWMDZnRyBHNsawNnZnAEc3RpbWUDMTI1MTc3MzM2MA--)

(http://groups.yahoo.com/;_ylc=X3oDMTJlbXNyNjBpBF9TAzk3MzU5NzE0BGdycElkAzE5NjIwMDg2BGdycHNwSWQDMTcwNTA2MzEwOARzZWMDZnRyBHNsawNnZnAEc3RpbWUDMTI1MTc3MzM2MA--)

(http://groups.yahoo.com/;_ylc=X3oDMTJlbXNyNjBpBF9TAzk3MzU5NzE0BGdycElkAzE5NjIwMDg2BGdycHNwSWQDMTcwNTA2MzEwOARzZWMDZnRyBHNsawNnZnAEc3RpbWUDMTI1MTc3MzM2MA--)

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(http://groups.yahoo.com/;_ylc=X3oDMTJlbXNyNjBpBF9TAzk3MzU5NzE0BGdycElkAzE5NjIwMDg2BGdycHNwSWQDMTcwNTA2MzEwOARzZWMDZnRyBHNsawNnZnAEc3RpbWUDMTI1MTc3MzM2MA--)

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(http://groups.yahoo.com/;_ylc=X3oDMTJlbXNyNjBpBF9TAzk3MzU5NzE0BGdycElkAzE5NjIwMDg2BGdycHNwSWQDMTcwNTA2MzEwOARzZWMDZnRyBHNsawNnZnAEc3RpbWUDMTI1MTc3MzM2MA--)
(http://groups.yahoo.com/;_ylc=X3oDMTJlbXNyNjBpBF9TAzk3MzU5NzE0BGdycElkAzE5NjIwMDg2BGdycHNwSWQDMTcwNTA2MzEwOARzZWMDZnRyBHNsawNnZnAEc3RpbWUDMTI1MTc3MzM2MA--)
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324. Re: Re: [24GHzHam] NF measured at 4.25dB

Yahoo group: 24GHzHam
Date: 2009-09-01 18:31:22 UTC
From: Jeffrey Pawlan
Topic: 319 Message: 324

No, I wanted to know how to modify the DRO to make it lock, regardless of frequency. Or did you find a DRO with an external input for the ref?

--- On Tue, 9/1/09, Frank Kelly <fm.kelly@...> wrote:

From: Frank Kelly <fm.kelly@...>
Subject: Re: Re: [24GHzHam] NF measured at 4.25dB
To: 24GHzHam@yahoogroups.com
Date: Tuesday, September 1, 2009, 10:02 AM

I found a few 12GHz CTI-Hurley DROs sometime back and use one of them locked at 11.88GHz to a 55MHz OCXO.
Unfortunatlely I was unable to find a way to pull the frequency far enough on the stock CTI DRO made for the Endwave transverter.
Frank WB6CWN

Sep 1, 2009 08:42:35 AM, 24GHzHam@yahoogroup s.com wrote:

Very interesting! PLEASE describe in detail, preferably with photos and or schematics of how you were able to lock the DRO with an ext osc. I have not found any spot in the DRO to lock it and the crystal is above gnd at both ends.

73

Jeffrey Pawlan WA6KBL

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From: wb6cwn <fm.kelly@verizon. net>
Subject: [24GHzHam] NF measured at 4.25dB
To: 24GHzHam@yahoogroup s.com
Date: Monday, August 31, 2009, 7:48 PM

I use a 11.880GHz CTI DRO locked to a 55MHz OCXO for the LO chain.

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325. Re: Re: Re: [24GHzHam] NF measured at 4.25dB

Yahoo group: 24GHzHam
Date: 2009-09-01 18:50:38 UTC
From: Frank Kelly
Topic: 319 Message: 325

Yes, the CTI DRO I found has an external ref input.? It will lock to anything from about 20 to 200MHz
FK

Sep 1, 2009 11:31:33 AM, 24GHzHam@yahoogroups.com wrote:
?

No, I wanted to know how to modify the DRO to make it lock, regardless of frequency. Or did you find a DRO with an external input for the ref?

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From: wb6cwn <;fm.kelly@verizon. net (http:///mc/compose?to=fm.kelly@...)>
Subject: [24GHzHam] NF measured at 4.25dB
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Date: Monday, August 31, 2009, 7:48 PM
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I use a 11.880GHz CTI DRO locked to a 55MHz OCXO for the LO chain. (http://groups.yahoo.com/;_ylc=X3oDMTJlbXNyNjBpBF9TAzk3MzU5NzE0BGdycElkAzE5NjIwMDg2BGdycHNwSWQDMTcwNTA2MzEwOARzZW

MDZnRyBHNsawNnZnAEc3RpbWUDMTI1MTc3MzM2MA--)

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(http://groups.yahoo.com/;_ylc=X3oDMTJlbXNyNjBpBF9TAzk3MzU5NzE0BGdycElkAzE5NjIwMDg2BGdycHNwSWQDMTcwNTA2MzEwOARzZWMDZnRyBHNsawNnZnAEc3RpbWUDMTI1MTc3MzM2MA--)

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(http://groups.yahoo.com/;_ylc=X3oDMTJlbXNyNjBpBF9TAzk3MzU5NzE0BGdycElkAzE5NjIwMDg2BGdycHNwSWQDMTcwNTA2MzEwOARzZWMDZnRyBHNsawNnZnAEc3RpbWUDMTI1MTc3MzM2MA--)
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your site traffic.

Group Charity

Give a laptop (http://us.ard.yahoo.com/SIG=14ht272ck/M=737447.13475021.13554044.8674578/D=groups/S=1705063108:NC/Y=YAHOO/EXP=1251780560/L=/B=OJnjCkPDhCk-/J=1251773360275231/K=XyaXTDvebBZRgT9p9l5VpQ/A=5733763/R=0/SIG=11o233dqm/*http://www.amazon.com/b/ref=yahoogroups?node=721521011)

Get a laptop: One

laptop per child

Yahoo! Groups

Small Business Group (http://us.ard.yahoo.com/SIG=14h49de56/M=493064.12016272.13586184.8674578/D=groups/S=1705063108:NC/Y=YAHOO/EXP=1251780560/L=/B=OZnjCkPDhCk-/J=1251773360275231/K=XyaXTDvebBZRgT9p9l5VpQ/A=5758222/R=0/SIG=124m43uve/*http://finance.groups.yahoo.com/group/BankofAmerica_SmallBusiness/)

Improve

326. Re: phase locked DRO

Yahoo group: 24GHzHam
Date: 2009-09-02 01:50:51 UTC
From: Jeffrey Pawlan
Topic: 319 Message: 326

That made it easy! I wish I had one of those. That would save me a lot of work.

Believe me, I made a real effort to get a schematic from CTI-Herley for the origianl ones and they were nasty. They would not even disclose the specifications for the crystal so I could order the right one to change frequency.

327. 24GHz Radio Update at WB6CWN

Yahoo group: 24GHzHam
Date: 2009-09-07 01:36:54 UTC
From: wb6cwn
Topic: 327 Message: 327

The Endwave transverter's 1W TX worked well on Frazier mountain in the August microwave contest. The RX's performance suffered however which warranted a review and tune-up in the shop this past week.

I am running a 1.2m offset fed dish and a 10/24Ghz dual band feed horn.
Tests with sun allowed the feed to be optimized, with 1dB+ improvement realized. The radio's NF was also measured and optimized at 4.25dB.
I'll also post a picture of the feed alignment work in the back yard using the sun.

I am receiving 7dB of sun noise and 0.4dB of moon noise now at 24Ghz on the 1.2m dish. EME anyone? :-)

This week's projects are to integrate an 8W TWT into the system before the upcoming September contest weekend back on 8000' Frazier Mountain in California.

See you on the air,
Frank WB6CWN

328. Re: [24GHzHam] 24GHz Radio Update at WB6CWN

Yahoo group: 24GHzHam
Date: 2009-09-07 03:42:01 UTC
From: Miguel Ramirez
Topic: 327 Message: 328

Congrats. Frank...

From: wb6cwn <fm.kelly@...>
To: 24GHzHam@yahoogroups.com
Sent: Sunday, September 6, 2009 6:36:54 PM
Subject: [24GHzHam] 24GHz Radio Update at WB6CWN

The Endwave transverter' s 1W TX worked well on Frazier mountain in the August microwave contest. The RX's performance suffered however which warranted a review and tune-up in the shop this past week.

I am running a 1.2m offset fed dish and a 10/24Ghz dual band feed horn.
Tests with sun allowed the feed to be optimized, with 1dB+ improvement realized. The radio's NF was also measured and optimized at 4.25dB.
I'll also post a picture of the feed alignment work in the back yard using the sun.

I am receiving 7dB of sun noise and 0.4dB of moon noise now at 24Ghz on the 1.2m dish. EME anyone? :-)

This week's projects are to integrate an 8W TWT into the system before the upcoming September contest weekend back on 8000' Frazier Mountain in California.

See you on the air,
Frank WB6CWN

329. Re: 24GHz Radio Update at WB6CWN

Yahoo group: 24GHzHam
Date: 2009-10-26 20:10:45 UTC
From: Zack W
Topic: 327 Message: 329

Just checking in, as some of the local hams have ben discussing 24 GHz operations and equipment.

What is the sensitivity of the RX you mentioned below? Is that without a separate preamp? Would it be improved by adding an LNA using a couple of the newer devices like the NE350184C which specs a NF of 1.1 dB at 24 GHz?

I'm trying to get the CT1DMK 24 GHz modules going. Having trouble with the 1500 to 12000 MHz multiplier I'm using but I'll get that worked out soon.

73, Zack W9SZ

--- In 24GHzHam@yahoogroups.com, "wb6cwn" <fm.kelly@...> wrote:
>
> The Endwave transverter's 1W TX worked well on Frazier mountain in the August microwave contest. The RX's performance suffered however which warranted a review and tune-up in the shop this past week.
>
> I am running a 1.2m offset fed dish and a 10/24Ghz dual band feed horn.
> Tests with sun allowed the feed to be optimized, with 1dB+ improvement realized. The radio's NF was also measured and optimized at 4.25dB.
> I'll also post a picture of the feed alignment work in the back yard using the sun.
>
> I am receiving 7dB of sun noise and 0.4dB of moon noise now at 24Ghz on the 1.2m dish. EME anyone? :-)
>
> This week's projects are to integrate an 8W TWT into the system before the upcoming September contest weekend back on 8000' Frazier Mountain in California.
>
> See you on the air,
> Frank WB6CWN
>

330. Re: New file uploaded to 24GHzHam

Yahoo group: 24GHzHam
Date: 2010-01-27 02:15:28 UTC
From: Gary VK2KYP
Topic: 31 Message: 330

Hi Piet, I can not view your waveguide switch photo is it still?

Thank you 73
Gary VK2KYP

--- In 24GHzHam@yahoogroups.com, 24GHzHam@yahoogroups.com wrote:
>
>
> Hello,
>
> This email message is a notification to let you know that
> a file has been uploaded to the Files area of the 24GHzHam
> group.
>
> File : /24Ghz filter is nou a waveguide switch
> Uploaded by : pa0vtw <pa0vtw@...>
> Description : 4 photo´s in my gallery pa0vtw
>
> You can access this file at the URL:
> http://groups.yahoo.com/group/24GHzHam/files/24Ghz%20filter%20is%20nou%20a%20waveguide%20switch
>
> To learn more about file sharing for your group, please visit:
> http://help.yahoo.com/l/us/yahoo/groups/original/members/web/index.htmlfiles
>
> Regards,
>
> pa0vtw <pa0vtw@...>
>

331. Re: [24GHzHam] Re: New file uploaded to 24GHzHam

Yahoo group: 24GHzHam
Date: 2010-01-27 05:38:09 UTC
From: Zack Widup
Topic: 31 Message: 331

You have to go to the Yahoogroup's website, go into the Photos section, find the folder "microsource 10,575-13,35Ghz" by pa0vtw, and the photos are in there. They are the last four photos.

Nice project!

73, Zack W9SZ

On Tue, Jan 26, 2010 at 8:15 PM, Gary VK2KYP <gbeech@...>wrote:

>
>
>
>
> Hi Piet, I can not view your waveguide switch photo is it still?
>
> Thank you 73
> Gary VK2KYP
>
> --- In 24GHzHam@yahoogroups.com <24GHzHam%40yahoogroups.com>,
> 24GHzHam@yahoogroups.com <24GHzHam%40yahoogroups.com> wrote:
> >
> >
> > Hello,
> >
> > This email message is a notification to let you know that
> > a file has been uploaded to the Files area of the 24GHzHam
> > group.
> >
> > File : /24Ghz filter is nou a waveguide switch
> > Uploaded by : pa0vtw <pa0vtw@...>
> > Description : 4 photo´s in my gallery pa0vtw
> >
> > You can access this file at the URL:
> >
> http://groups.yahoo.com/group/24GHzHam/files/24Ghz%20filter%20is%20nou%20a%20waveguide%20switch
> >
> > To learn more about file sharing for your group, please visit:
> >
> http://help.yahoo.com/l/us/yahoo/groups/original/members/web/index.htmlfiles
> >
> > Regards,
> >
> > pa0vtw <pa0vtw@...>
> >

>
>
>

332. wave guide switch

Yahoo group: 24GHzHam
Date: 2010-01-27 23:10:14 UTC
From: pa0vtw
Topic: 332 Message: 332

hello Gary

it is in the microsource 10,575-13,35 ghz box
like w9sz mention

73'Piet

333. FS:NTVG12BC Transceiver

Yahoo group: 24GHzHam
Date: 2010-02-03 03:33:53 UTC
From: ww2r_dave
Topic: 333 Message: 333

Clearing out the garage last weekend I came across a Nortel NTVG12BC transceiver. As I no longer have a need for it i am offering it for $100 shipped CONUS. It does not have the dish. A picture is available at http://g4fre.com/24g_mod.jpg. The filters arent marked with frequencies, just nortel part numbers. The oscillator is 12.3GHz. The unit was marked P1db 28.71dbm. The power supply produces volts, but sold as is

If interested, contact me off the list.

Dave

ww2r

http://g4fre.com/ww2r.htm

334. Re: FS:NTVG12BC Transceiver

Yahoo group: 24GHzHam
Date: 2010-02-03 15:59:58 UTC
From: ww2r_dave
Topic: 333 Message: 334

The unit is spoken for. Thanks to all of those who enquired

Dave

ww2r

--- In 24GHzHam@yahoogroups.com, "ww2r_dave" <ww2r2@...> wrote:
>
> Clearing out the garage last weekend I came across a Nortel NTVG12BC transceiver. As I no longer have a need for it i am offering it for $100 shipped CONUS. It does not have the dish. A picture is available at http://g4fre.com/24g_mod.jpg . The filters arent marked with frequencies, just nortel part numbers. The oscillator is 12.3GHz. The unit was marked P1db 28.71dbm. The power supply produces volts, but sold as is
>
> If interested, contact me off the list.
>
> Dave
>
> ww2r
>
> http://g4fre.com/ww2r.htm
>

335. tx rx switching

Yahoo group: 24GHzHam
Date: 2010-02-04 22:42:49 UTC
From: Gary VK2KYP
Topic: 335 Message: 335

Hi all, I have just recntly received my SDH units and I am keen to
get them going are the any pitfalls I should be aware other than
removing the wrong screws?
I have been reading the messages about the tx rx switching and
I have been unable to locate some NDT456P fets are there others which are suitable.
This is great list and I thank all those who contribute.

Thank you 73 Gary VK2KYP

336. tx rx switching

Yahoo group: 24GHzHam
Date: 2010-02-05 03:01:29 UTC
From: Joseph Ruggieri
Topic: 335 Message: 336

Hello Gary and the Group,

Mouser still has good quantities of the NDT456P in stock for $1.01 each:

http://www.mouser.com/access/?pn=512-NDT456P

This is the ideal part for this application.

The most important change you need to make to these modules is the post mixer amplifier bias resistors as I published on this site.
The modules have an error in the bias conditions for the MMIC which caused most of them to fail in the field.
That is why many who purchased these from the Netherlands received bad or soon to fail units.
I found this problem over a year ago after I had 3 modules fail in my 24ghz beacon application after 2-3 months each.
After making the modification on the beacon and my three 24GHz transverters I have had zero failures.
P.S.
There is no reason to ever take the covers off of the RF sections. Things will only go from bad to worse

Joe KI4NPV

337. Re: tx rx switching

Yahoo group: 24GHzHam
Date: 2010-02-11 22:33:42 UTC
From: Zack W
Topic: 335 Message: 337

Hi Joe,

Where is this info? I can't find it.

73, Zack W9SZ

--- In 24GHzHam@yahoogroups.com, "Joseph Ruggieri" <jruggieri3@...> wrote:
>
> Hello Gary and the Group,
>
> Mouser still has good quantities of the NDT456P in stock for $1.01 each:
>
> http://www.mouser.com/access/?pn=512-NDT456P
>
> This is the ideal part for this application.
>
> The most important change you need to make to these modules is the post mixer amplifier bias resistors as I published on this site.
> The modules have an error in the bias conditions for the MMIC which caused most of them to fail in the field.
> That is why many who purchased these from the Netherlands received bad or soon to fail units.
> I found this problem over a year ago after I had 3 modules fail in my 24ghz beacon application after 2-3 months each.
> After making the modification on the beacon and my three 24GHz transverters I have had zero failures.
> P.S.
> There is no reason to ever take the covers off of the RF sections. Things will only go from bad to worse
>
> Joe KI4NPV
>

338. Re: [24GHzHam] Re: tx rx switching

Yahoo group: 24GHzHam
Date: 2010-02-12 00:23:26 UTC
From: Joseph Ruggieri
Topic: 335 Message: 338

Hi Zack,

It is in message # 243 .
Le me know if you have any problems understanding the mod.

KI4NPV

----- Original Message -----
From: Zack W
To: 24GHzHam@yahoogroups.com
Sent: Thursday, February 11, 2010 5:33 PM
Subject: [24GHzHam] Re: tx rx switching

Hi Joe,

Where is this info? I can't find it.

73, Zack W9SZ

--- In 24GHzHam@yahoogroups.com, "Joseph Ruggieri" <jruggieri3@...> wrote:
>
> Hello Gary and the Group,
>
> Mouser still has good quantities of the NDT456P in stock for $1.01 each:
>
> http://www.mouser.com/access/?pn=512-NDT456P
>
> This is the ideal part for this application.
>
> The most important change you need to make to these modules is the post mixer amplifier bias resistors as I published on this site.
> The modules have an error in the bias conditions for the MMIC which caused most of them to fail in the field.
> That is why many who purchased these from the Netherlands received bad or soon to fail units.
> I found this problem over a year ago after I had 3 modules fail in my 24ghz beacon application after 2-3 months each.
> After making the modification on the beacon and my three 24GHz transverters I have had zero failures.
> P.S.
> There is no reason to ever take the covers off of the RF sections. Things will only go from bad to worse
>
> Joe KI4NPV
>

339. Re: [24GHzHam] Re: tx rx switching

Yahoo group: 24GHzHam
Date: 2010-02-12 03:22:52 UTC
From: Zack Widup
Topic: 335 Message: 339

Oh OK. Thank you! For some reason I was thinking it was in the Files section.

I understand that fine.

73, Zack W9SZ

On Thu, Feb 11, 2010 at 6:23 PM, Joseph Ruggieri <jruggieri3@...>wrote:

>
>
> Hi Zack,
>
> It is in message # 243 .
> Le me know if you have any problems understanding the mod.
>
> KI4NPV
>
>
>
> ----- Original Message -----
> *From:* Zack W <w9sz.zack@...>
> *To:* 24GHzHam@yahoogroups.com
> *Sent:* Thursday, February 11, 2010 5:33 PM
> *Subject:* [24GHzHam] Re: tx rx switching
>
>
>
> Hi Joe,
>
> Where is this info? I can't find it.
>
> 73, Zack W9SZ
>
> --- In 24GHzHam@yahoogroups.com, "Joseph Ruggieri" <jruggieri3@...> wrote:
> >
> > Hello Gary and the Group,
> >
> > Mouser still has good quantities of the NDT456P in stock for $1.01 each:
> >
> > http://www.mouser.com/access/?pn=512-NDT456P
> >
> > This is the ideal part for this application.
> >
> > The most important change you need to make to these modules is the post
> mixer amplifier bias resistors as I published on this site.

> > The modules have an error in the bias conditions for the MMIC which
> caused most of them to fail in the field.
> > That is why many who purchased these from the Netherlands received bad or
> soon to fail units.
> > I found this problem over a year ago after I had 3 modules fail in my
> 24ghz beacon application after 2-3 months each.
> > After making the modification on the beacon and my three 24GHz
> transverters I have had zero failures.
> > P.S.
> > There is no reason to ever take the covers off of the RF sections. Things
> will only go from bad to worse
> >
> > Joe KI4NPV
> >
>
>
>

340. Heatsink

Yahoo group: 24GHzHam
Date: 2010-02-13 05:31:48 UTC
From: Gary VK2KYP
Topic: 340 Message: 340

Hi All,
What are the Heatsink recommendations for using the SDH tranceiver.
Considering 7.5 volts at approximately 5 amps 35 watts of heat.

Thank you
73 Gary VK2KYP

341. End wave unit differences

Yahoo group: 24GHzHam
Date: 2010-02-14 13:06:48 UTC
From: GM8BJF
Topic: 341 Message: 341

I bought a couple of the Endwave units from Kes (The PA who was selling them a couple of years ago.) One I successfull built into a transverter and tha other I got out recently with a view to making a beacon out of it. The second unit does not function on receive. I have not tested the Tx side yet. I note that there are considerable differences in what component positions are populated on both sides of the PCB to the extent that one of the quad opamps (Z4) is missing on the non-working unit. I also notice it is missing some of the MMIC current sense resistors.
Can anybody throw any light on this?

73s

Brian,
GM8BJF

342. Re: [24GHzHam] End wave unit differences

Yahoo group: 24GHzHam
Date: 2010-02-14 16:07:37 UTC
From: Michael Aust
Topic: 341 Message: 342

There are two different 24GHz SDH units. One has two TX MMICs
in parallel for more output power. The higher power unit needed
additional current regulators using additional op-amps.

The other SDH unit had a single Tx MMIC and required fewer
current regulator sense op-amps to control Vgs (gate control)
and maintain constant Ids(drain current).

Mike

From: GM8BJF <brian.flynn@...>
To: 24GHzHam@yahoogroups.com
Sent: Sun, February 14, 2010 5:06:48 AM
Subject: [24GHzHam] End wave unit differences

I bought a couple of the Endwave units from Kes (The PA who was selling them a couple of years ago.) One I successfull built into a transverter and tha other I got out recently with a view to making a beacon out of it. The second unit does not function on receive. I have not tested the Tx side yet. I note that there are considerable differences in what component positions are populated on both sides of the PCB to the extent that one of the quad opamps (Z4) is missing on the non-working unit. I also notice it is missing some of the MMIC current sense resistors.
Can anybody throw any light on this?

73s

Brian,
GM8BJF

343. Re: End wave unit differences

Yahoo group: 24GHzHam
Date: 2010-02-14 17:25:57 UTC
From: GM8BJF
Topic: 341 Message: 343

Dear Mike,

Many thanks for the reply. That makes sense with what I see on the PCB. The Unit I have been using gives about +30dBm out on 24048 MHz so I suspect this other one must be a lower power unit. I will have a closer look at the model numbers to see if that throws any light on things. Thanks for the help.

73s

Brian, GM8BJF.

--- In 24GHzHam@yahoogroups.com, Michael Aust <ava622@...> wrote:
>
> There are two different 24GHz SDH units. One has two TX MMICs
> in parallel for more output power. The higher power unit needed
> additional current regulators using additional op-amps.
>
> The other SDH unit had a single Tx MMIC and required fewer
> current regulator sense op-amps to control Vgs (gate control)
> and maintain constant Ids(drain current).
>
> Mike
>
>
>
>
>
>
>
> _____
> From: GM8BJF <brian.flynn@...>
> To: 24GHzHam@yahoogroups.com
> Sent: Sun, February 14, 2010 5:06:48 AM
> Subject: [24GHzHam] End wave unit differences
>
>
> I bought a couple of the Endwave units from Kes (The PA who was selling them a couple of years ago.) One I successfull built into a transverter and tha other I got out recently with a view to making a beacon out of it. The second unit does not function on receive. I have not tested the Tx side yet. I note that there are considerable differences in what component positions are populated on both sides of the PCB to the extent that one of the quad opamps (Z4) is missing on the non-working unit. I also notice it is missing some of the MMIC current sense resistors.
> Can anybody throw any light on this?
>
> 73s

>
> Brian,
> GM8BJF
>

344. CTR 26-02M Nortel

Yahoo group: 24GHzHam
Date: 2010-04-24 19:46:25 UTC
From: m0els
Topic: 344 Message: 344

Hi all, Just looking for mod info for the above unit to get it onto 24ghz. I would appreciate any mod info, circuit diagrams etc.

Thanks
John

345. Thales 23 and 26GHz transceiver units

Yahoo group: 24GHzHam
Date: 2010-06-07 10:16:11 UTC
From: Dave
Topic: 345 Message: 345

hey all,
its been too quiet on here for far too long.

I wonder how many others on here got into the Thales units that were being sold back in March 2010 by an Israelie eBayer ??

I got one of the 23GHz units and several of my fellow microwavers got the 26GHz units. Some of us have been experimenting with Elcom synth's also available from the same ebayer. The Elcom 1201 covers ~ 11-12GHz
and the Elcom 1295 that covers 12.220 to 12.950GHz. I have the later and running it on 12.670GHz.
After inputting this into the LO input on the Thales unit it gets doubled to 25.340GHz minus my 1292MHz IF freq gives 24.048GHz.

The Thales units are capable of ~ 1W at 24GHz. Tests by various experimenters has produced anything from ~ 900mW to ~ 1.2W VERY respectable :)

Have a look at my www pages for my project pix and notes
www.sydneystormcity.com/24GHz.htm

lets get this group active again with lots of experiment reports etc :)

cheers
Dave
VK2TDN

346. Re: Thales 23 and 26GHz transceiver units

Yahoo group: 24GHzHam
Date: 2010-09-10 23:35:52 UTC
From: Dave
Topic: 345 Message: 346

The 24GHz xverter using the Thales transceiver and Elcom synth is fully operational. had its first onair tests on the 31 July with good success

cheers
Dave
VK2TDN

347. Endwave RX not working ?

Yahoo group: 24GHzHam
Date: 2010-10-24 15:43:49 UTC
From: Steen
Topic: 347 Message: 347

I have had my endwave unit for 2 years mounted on top of the mast, and it has been working without problems althoug i did not made the bias modifications as decribed in this forum. My receiver then stopped working and my first thougt was that the bias problem had burned out the RX. I took however time to check voltages, lo level etc., and then i discovered that by changing Z11.4 i could get receiver gain! Z11 switches between upper and lower sideband from the imagereject mixer. It turned out that the GAAs switch Z12 was faulty. I took it out and replaced it with a piece of wire (pin8 to pin2).

Maybee other RX failures come from the same component ?

OZ2TG, Steen

348. Re: [24GHzHam] Endwave RX not working ?

Yahoo group: 24GHzHam
Date: 2010-10-24 16:20:43 UTC
From: Zack Widup
Topic: 347 Message: 348

Is anyone using a GaAsFET preamp ahead of the receive input on these units? If so, what range of gain seems to work the best?

73, Zack W9SZ

On 10/24/10, Steen <oz2tg@...> wrote:
> I have had my endwave unit for 2 years mounted on top of the mast, and it
> has been working without problems althoug i did not made the bias
> modifications as decribed in this forum.
> My receiver then stopped working and my first thougt was that the bias
> problem had burned out the RX. I took however time to check voltages, lo
> level etc., and then i discovered that by changing Z11.4 i could get
> receiver gain! Z11 switches between upper and lower sideband from the
> imagereject mixer. It turned out that the GAAs switch Z12 was faulty. I took
> it out and replaced it with a piece of wire (pin8 to pin2).
>
> Maybee other RX failures come from the same component ?
>
> OZ2TG, Steen
>
>
>

349. Re: [24GHzHam] Endwave RX not working ?

Yahoo group: 24GHzHam
Date: 2010-10-25 01:04:15 UTC
From: Joseph Ruggieri
Topic: 347 Message: 349

Hi Zack and others interested,

A gaas fet pream[is not necessary since the input uses a high gain gaas MMIC selected for 2.1dB NF.
Overall gain from the RF input to the IF output is 35dB @ 200MW so you should use a 10dB pad between the IF and your transverter.

Joe KI4NPV

----- Original Message -----
From: Zack Widup
To: 24GHzHam@yahoogroups.com
Sent: Sunday, October 24, 2010 12:20 PM
Subject: Re: [24GHzHam] Endwave RX not working ?

Is anyone using a GaAsFET preamp ahead of the receive input on these units? If so, what range of gain seems to work the best?

73, Zack W9SZ

On 10/24/10, Steen <oz2tg@...> wrote:
> I have had my endwave unit for 2 years mounted on top of the mast, and it
> has been working without problems althoug i did not made the bias
> modifications as decribed in this forum.
> My receiver then stopped working and my first thougt was that the bias
> problem had burned out the RX. I took however time to check voltages, lo
> level etc., and then i discovered that by changing Z11.4 i could get
> receiver gain! Z11 switches between upper and lower sideband from the
> imagereject mixer. It turned out that the GAAs switch Z12 was faulty. I took
> it out and replaced it with a piece of wire (pin8 to pin2).
>
> Maybee other RX failures come from the same component ?
>
> OZ2TG, Steen
>
>
>

350. Re: [24GHzHam] Endwave RX not working ?

Yahoo group: 24GHzHam
Date: 2010-10-25 16:08:30 UTC
From: Zack Widup
Topic: 347 Message: 350

Thanks Joe!

73, Zack W9SZ

On Sun, Oct 24, 2010 at 8:04 PM, Joseph Ruggieri <jruggieri3@...>wrote:

>
>
> Hi Zack and others interested,
>
> A gaas fet pream[is not necessary since the input uses a high gain gaas
> MMIC selected for 2.1dB NF.
> Overall gain from the RF input to the IF output is 35dB @ 200MW so you
> should use a 10dB pad between the IF and your transverter.
>
> Joe KI4NPV
>
>
>
> ----- Original Message -----
> *From:* Zack Widup <w9sz.zack@...>
> *To:* 24GHzHam@yahoogroups.com
> *Sent:* Sunday, October 24, 2010 12:20 PM
> *Subject:* Re: [24GHzHam] Endwave RX not working ?
>
>
>
> Is anyone using a GaAsFET preamp ahead of the receive input on these
> units? If so, what range of gain seems to work the best?
>
> 73, Zack W9SZ
>
> On 10/24/10, Steen <oz2tg@...> wrote:
> > I have had my endwave unit for 2 years mounted on top of the mast, and it
> > has been working without problems althoug i did not made the bias
> > modifications as decribed in this forum.
> > My receiver then stopped working and my first thougt was that the bias
> > problem had burned out the RX. I took however time to check voltages, lo
> > level etc., and then i discovered that by changing Z11.4 i could get
> > receiver gain! Z11 switches between upper and lower sideband from the
> > imagereject mixer. It turned out that the GAAs switch Z12 was faulty. I
> took
> > it out and replaced it with a piece of wire (pin8 to pin2).
> >
> > Maybee other RX failures come from the same component ?
> >

> > OZ2TG, Steen
> >
> >
> >
>
>
>

351. MO. OPS

Yahoo group: 24GHzHam
Date: 2011-07-16 19:30:51 UTC
From: Dave Calvert
Topic: 351 Message: 351

Hello to this group,
Is there anyone active on 24 Gigs in the state of MO. ? Has anyone ever been know to be active from this state (that is licensed in MO.)???
73,
Dave

352. Re: 12,5 Ghz oscillator

Yahoo group: 24GHzHam
Date: 2011-08-01 07:21:42 UTC
From: Gary VK2KYP
Topic: 210 Message: 352

Hi All,
Has anyone tried GPS locking the 50 MHz reference or tried feeding the microcource Synth. from a 10 MHz ref like a Thunderbolt GPSDO. It may be possible to feed the 10 MHz directly or failing this multiplying the 10 MHz reference x5.

Thank you

73 Gary VK2KYP

--- In 24GHzHam@yahoogroups.com, "Gary VK2KYP" <gbeech@...> wrote:
>
> Hi All,
> I have made some more prorress with the Synthesisers.
>
> For Synth. output frequency between 10.575 GHZ to 12.0 GHz the value
> entered to Daves program is multiplied by 3
>
> For Synth. output frequency between 12.00 GHz to 13.5 GHz the value
> entered to Daves program is multiplied by 2
>
> I hope this helps.
>
> 73 Gary VK2KYP
>
> For --- In 24GHzHam@yahoogroups.com, "Gary VK2KYP" <gbeech@> wrote:
> >
> > Hi All,
> > I have been working with Microsource SNP101341001 Synth. (10.575-
> > 13.35 GHz) Using Dave G4FRE software for the Elcom 1201s Synth.
> which
> > can be downloaded from his webpage. I have been able to command the
> > Microsourch Synth up to 11.950 Ghz. When I try to go beyond 12 Ghz
> it
> > will not accept the command. Has anyone else tried this?
> >
> > I aslo stated above that the default frequency of my unit was 12.5
> > GHz this is incorrect,the dafault frequency is 12.0 Ghz.
> >
> > 73 Gary VK2KYP
> >
> >
> > --- In 24GHzHam@...m, "Gary VK2KYP" <gbeech@> wrote:
> > >
> > > Hi Piet,
> > > I carried out some tests with my unit on the weekend.
> > >

> > > The default frequency for my one is 12.5 GHz
> > >
> > > Dave G4fre has written some software for the Elcom units which
> you
> > > can download from his website.
> > >
> > > I have modified this slightly and programmed a PIC, I hope to try
> > > this soon.
> > >
> > > 73 Gary VK2KYP
> > >
> > >
> > > --- In 24GHzHam@yahoogroups.com, "pa0vtw" <pa0vtw@> wrote:
> > > >
> > > > --- In 24GHzHam@yahoogroups.com, "Gary VK2KYP" <gbeech@> wrote:
> > > > >
> > > > > Hi Piet,
> > > > > Have you made any progress with your microsource oscillator.
> > > > >
> > > > > I am about to look at mine again.
> > > > >
> > > > > 73 Gary VK2KYP
> > > > >
> > > > > --- In 24GHzHam@yahoogroups.com, "Gary VK2KYP" <gbeech@>
> wrote:
> > > > > >
> > > > > > Hi Piet,
> > > > > > My oscillator is a
> > > > > >
> > > > > > Microsource SNP101341001
> > > > > > 10.575-13.35 GHz
> > > > > >
> > > > > > I think this is the same as yours.
> > > > > >
> > > > > > regards Gary
> > > > > >
> > > > >
> > > >
> > > > hello Gary
> > > > I have´t look at my, but i found sam info
> > > > on internet from Elcom that are the same boxes
> > > > as wat wi have
> > > > we neat samone ho has the nohou to program that device
> > > > > >i will put the info from Elcom in my photo box
> > > >
> > > > regards Piet PA0VTW
> > > > > > --- In 24GHzHam@yahoogroups.com, "pa0vtw" <pa0vtw@> wrote:
> > > > > > >
> > > > > > > Hi Gary
> > > > > > >

> > > > > > > i don`t know that we have the same module
> > > > > > > my module has a 15 pin connector
> > > > > > > i put a picture on my album
> > > > > > > then you see my module,it has a
> > > > > > > pic prosessor in it the number is 16c72a
> > > > > > >
> > > > > > >
> > > > > > > 73`Piet
> > > > > > >
> > > > > >
> > > > >
> > > >
> >
>

353. HUGHES Network Systems (Earth Station)

Yahoo group: 24GHzHam
Date: 2011-08-25 21:04:25 UTC
From: Dave
Topic: 353 Message: 353

Hello to the group,
Question - Is there anyone in this group running the 23 to 28 GHz HUGHES Network Systems (earth Station) converted to our 24.192 GHz band?

I bought one of these from Dayton HamVention this year and I have been sick so I opened up my unit. I will try and give some detail about the unit I have. Inside the white vaccum box is one main circuit board with # 1025891- Also, near the WG output is the word "TIGRIS". There are three voltage reg. visiable on the board: VR3 - LM2941CT, VR4 - LM2940T, VR9 - LM2941S. About half the board has RF shielded potted channel covering everything up.

It looks like a WG combiner between the TX box and the separate LNB box to the Large Feed. The LNB has a "F" connector output to the "F" connector input to the TX box to be coupled back on the input/ output "N" connector. LNB information: P/N 1024572-0002, S/N 16491 REV. A. Made in Japan.

The WG Unit that connects the TX box to the LNB box is P/N 1012440-0001
S/N 63964 REV. C

I am getting the feed ready with a WG to sma transistion so that I can have the gain measured hopefully. Nice looking feed. Has a clear piece of something covering the opening and it had pressure on it until I opened the TX box.

Are these worth fulling with? Is there another yahoogroups that I need to take this to? Any help would be appriciated!
73,
Dave - KB0PE
St. Louis, MO.

354. Verticom MTS-1500

Yahoo group: 24GHzHam
Date: 2011-09-22 14:55:59 UTC
From: Zack Widup
Topic: 354 Message: 354

I have a Verticom MTS1500-151-01 that I would like to use at 11880.0 MHz.
I'm a bit confused by a couple files.

First off, looking at the assembler language file in the Files
section, Verticom_dual_24_47.asm,
I'm not sure if the first or second frequency for control word 2 is for
11880. I think it's the first one but not absolutely sure.

There is a file at G4FRE's webpage called mts1500.pdf which contains some
info on writing the code words for the unit. I tried writing out the second
code word by hand for this unit at 11880 MHz and was getting something
completely different than what is in the asm file. It is confusing. Or I am
very confused.

Also, the file at G4FRE's website, mts1500.asm (which is in the file
mts1500.zip) has a slightly different code for the control word 2 that I
think is for 11880.

Can anyone shed some light on this? Who else has used this unit at 11880?

73, Zack W9SZ

355. RE: [24GHzHam] Verticom MTS-1500

Yahoo group: 24GHzHam
Date: 2011-09-23 03:59:33 UTC
From: Dave ww2r
Topic: 354 Message: 355

1. Verticom MTS-1500
Posted by: "Zack Widup" w9sz.zack@... w9sz
Date: Thu Sep 22, 2011 7:56 am ((PDT))

I have a Verticom MTS1500-151-01 that I would like to use at 11880.0 MHz.
I'm a bit confused by a couple files.

First off, looking at the assembler language file in the Files
section, Verticom_dual_24_47.asm,
I'm not sure if the first or second frequency for control word 2 is for
11880. I think it's the first one but not absolutely sure.

****
control word 2 freq 1 is 11880

I have in the past tried to edit "Verticom_dual_24_47.asm" to flip the order
of the 2 frequencies at the top of the file but as i didnt upload it I
cannot. When i try to upload a revised version i get "connection refused" so
i gave up (a long time ago)

****

There is a file at G4FRE's webpage called mts1500.pdf which contains some
info on writing the code words for the unit. I tried writing out the second
code word by hand for this unit at 11880 MHz and was getting something
completely different than what is in the asm file. It is confusing. Or I am
very confused.

****

8 pic with the above code/pcbs were sent out for use on 11880 and worked ok
so the values for 11880 do work out

****
Also, the file at G4FRE's website, mts1500.asm (which is in the file
mts1500.zip) has a slightly different code for the control word 2 that I
think is for 11880.

****
the file header explains

;dual freq
;11772.08333 gives 47088.3333333
;11663.75 gives 46655 (433 IF for 47088)

therefore word 2 will have different code for word 2 than that for 11880

****

Can anyone shed some light on this? Who else has used this unit at 11880?

****

there are currently 9 working units out there that I have supplied, unsure of the total

Dave

ww2r

****

73, Zack W9SZ

Messages in this topic (1)

Version: 10.0.1410 / Virus Database: 1520/3912 - Release Date: 09/22/11

356. Re: [24GHzHam] Verticom MTS-1500

Yahoo group: 24GHzHam
Date: 2011-09-23 13:10:44 UTC
From: Zack Widup
Topic: 354 Message: 356

Hi Dave,

Thanks! I figured it out last night. What was throwing me off was the three leading zeros on the code word 2. For the 151-01 unit, it appears the first three bits sent will always be zeros. I looked over your code carefully and saw you send the three zeros first, then the other 40 bits of word 2.

I programmed the PIC last night. Now I just have to throw together a little circuit to connect it to the unit. I should have it going this weekend.

73, Zack W9SZ

On 9/22/11, Dave ww2r <ww2r2@...> wrote:
> 1. Verticom MTS-1500
> Posted by: "Zack Widup" w9sz.zack@... w9sz
> Date: Thu Sep 22, 2011 7:56 am ((PDT))
>
> I have a Verticom MTS1500-151-01 that I would like to use at 11880.0 MHz.
> I'm a bit confused by a couple files.
>
> First off, looking at the assembler language file in the Files
> section, Verticom_dual_24_47.asm,
> I'm not sure if the first or second frequency for control word 2 is for
> 11880. I think it's the first one but not absolutely sure.
>
> ********************
> control word 2 freq 1 is 11880
>
> I have in the past tried to edit "Verticom_dual_24_47.asm" to flip the order
> of the 2 frequencies at the top of the file but as i didnt upload it I
> cannot. When i try to upload a revised version i get "connection refused" so
> i gave up (a long time ago)
>
> ********************
>
> There is a file at G4FRE's webpage called mts1500.pdf which contains some
> info on writing the code words for the unit. I tried writing out the second
> code word by hand for this unit at 11880 MHz and was getting something
> completely different than what is in the asm file. It is confusing. Or I am
> very confused.
>
> ******************************
>
> 8 pic with the above code/pcbs were sent out for use on 11880 and worked ok

> so the values for 11880 do work out
>
> **********
> Also, the file at G4FRE's website, mts1500.asm (which is in the file
> mts1500.zip) has a slightly different code for the control word 2 that I
> think is for 11880.
>
> **********
> the file header explains
>
> ;dual freq
> ;11772.08333 gives 47088.3333333
> ;11663.75 gives 46655 (433 IF for 47088)
>
> therefore word 2 will have different code for word 2 than that for 11880
>
> **********
>
> Can anyone shed some light on this? Who else has used this unit at 11880?
>
> **********
>
> there are currently 9 working units out there that I have supplied, unsure
> of the total
>
> Dave
>
> ww2r
>
> **********
>
>
>
>
>
> 73, Zack W9SZ
>
>
>
>
> Messages in this topic (1)
>
>
>
>
> Version: 10.0.1410 / Virus Database: 1520/3912 - Release Date: 09/22/11
>
>

357. Re: Verticom MTS-1500

Yahoo group: 24GHzHam
Date: 2011-11-06 12:55:08 UTC
From: adam
Topic: 354 Message: 357

Hello Dave,

I built the controller with 12F675 (dual frequency) for the MTS1500-151-01 YIG oscillator but found some problems in operation.

I think of, damaged YIG purchased trough E-bay....
but let me ask a few questions:

1. When in loop the led diode should be off?
(When I switch on the yig LED goes on for a less then a half second then stays off)

2. The frequency of my YIG is not stable at all, not even for a narrow FM operation, when listening some signals with transverter(24 GHz) using this YIG for the L.O. the CW signal sound like "scrambled ssb signal" like frequency hopping. Same thing with any programmed frequency.
Switching between the two programmed frequency change the frequency but it is not stable at all, even after 10 minutes when the yig is hot and should be stable enough.

Any hint from your side?
Thanks,

Adam 9A4QV

358. Re: Verticom MTS-1500

Yahoo group: 24GHzHam
Date: 2011-11-06 19:23:39 UTC
From: ww2r_dave
Topic: 354 Message: 358

1.The LED will go on and stay on when the Verticom is locked up.

2. The verticom is not locked therefore it will not be stable. When locked and the internal reference oscillator has warmed up it will stay within 1kHz for hours

Are you applying the 8V and the 12V to the verticom at the same time?

Dave

ww2r

--- In 24GHzHam@yahoogroups.com, "adam" <adam9a4qv@...> wrote:
>
> Hello Dave,
>
> I built the controller with 12F675 (dual frequency) for the MTS1500-151-01 YIG oscillator but found some problems in operation.
>
> I think of, damaged YIG purchased trough E-bay....
> but let me ask a few questions:
>
> 1. When in loop the led diode should be off?
> (When I switch on the yig LED goes on for a less then a half second then stays off)
>
> 2. The frequency of my YIG is not stable at all, not even for a narrow FM operation, when listening some signals with transverter(24 GHz) using this YIG for the L.O. the CW signal sound like "scrambled ssb signal" like frequency hopping. Same thing with any programmed frequency.
> Switching betwean the two programmed frequency change the frequency but it is not stable at all, even after 10 minutes when the yig is hot and should be stable enough.
>
> Any hint from your side?
> Thanks,
>
> Adam 9A4QV
>

359. Re: Verticom MTS-1500

Yahoo group: 24GHzHam
Date: 2011-11-07 07:12:20 UTC
From: adam
Topic: 354 Message: 359

So my Verticom is not locked up, OK.

Yes I am applying the 8V and the 12V at the same time, using the the 12V and 8V regulator, shematic from the mts1500.pdf article (Dave Robinson, WW2R, G4FRE)

It is interesting when taking off the bridge on the pcb (two frequency) the frequency change immediately, it means that the Verticom is receiving the command from PIC but not locking.

Trying to programm any frequency in the Verticom working range, the same thing. Of course, I am using excell sheet for the programming words.

Thanks,
Adam

--- In 24GHzHam@yahoogroups.com, "ww2r_dave" <ww2r2@...> wrote:
>
> 1.The LED will go on and stay on when the Verticom is locked up.
>
> 2. The verticom is not locked therefore it will not be stable. When locked and the internal reference oscillator has warmed up it will stay within 1kHz for hours
>
> Are you applying the 8V and the 12V to the verticom at the same time?
>
> Dave
>
> ww2r
>
>
> --- In 24GHzHam@yahoogroups.com, "adam" <adam9a4qv@> wrote:
> >
> > Hello Dave,
> >
> > I built the controller with 12F675 (dual frequency) for the MTS1500-151-01 YIG oscillator but found some problems in operation.
> >
> > I think of, damaged YIG purchased trough E-bay....
> > but let me ask a few questions:
> >
> > 1. When in loop the led diode should be off?
> > (When I switch on the yig LED goes on for a less then a half second then stays off)
> >
> > 2. The frequency of my YIG is not stable at all, not even for a narrow FM operation, when listening some signals with transverter(24 GHz) using this YIG for the L.O. the CW signal sound like "scrambled ssb signal" like frequency hopping. Same thing with any programmed frequency.

> > Switching betwean the two programmed frequency change the frequency but it is not stable at all, even after 10 minutes when the yig is hot and should be stable enough.
> >
> > Any hint from your side?
> > Thanks,
> >
> > Adam 9A4QV
> >
>

360. Re: Verticom MTS-1500

Yahoo group: 24GHzHam
Date: 2011-11-08 10:40:58 UTC
From: phb95170
Topic: 354 Message: 360

Hello Adam

I have the same Verticom synthesizer than you and the same problem also. But the LED indicating locking is sometimes on but get off after some minutes. Just a remark about the schematic : this LED is not in the right direction but I suppose you have corrected that !

In order to try to understand why the locking is difficult I have opened the box and it is not an easy job with all these screws often difficult to remove without damaging their head...

I have also unsoldered the flex connecting the YIG to the board to be able to see the bottom side of this board. I took high resolution pictures and tried to get the schematics. Not easy because it is a four layers board but I succeeded partially and now, I am able to understand how it works !

The 52.5 MHz OCXO frequency is multiplied by 2 and by 5 on the board to have a 525 MHz signal. In the microwave part, this frequency is multiplied by 20 to get the offset frequency at 10500 MHz. This one is mixed with the synthesizer output to get Fout - Foffset. It is at low level at the mixer output so there is an 20 dB amplifier on the board followed by a 8 dB attenuator before driving the RF input of the LMX2325 PLL. The OCXO frequency is also divided by 2 to get the Ref frequency at 26.25 MHz.

There is a coarse and a fine tuning of the YIG. The coarse one is named pretuning in mts1500.pdf and is made by driving one of the main coils (there are 2 main coils !) but this tuning is not controlled by the PLL. The PLL controls the fine tuning by driving the FM coil of the YIG. The fine tuning range is about 80 MHz and if the pretuning is not correct the PLL can be unable to set the right frequency.

I suppose this is why the PLL doesn't lock and I have an idea to test if I am right but I am currently in Japan for two weeks and cannot do it now.

So Adam, can you try to modify the value for pretuning (C) by adding 20 or substracting 20 to the value calculated in order to modify the pretuning by about 40 MHz ?

I have an other idea if it doesn't work but I'll tell you that later.

Best regards.

Philippe
--- In 24GHzHam@yahoogroups.com, "adam" <adam9a4qv@...> wrote:
>
> So my Verticom is not locked up, OK.
>
> Yes I am applying the 8V and the 12V at the same time, using the the 12V and 8V regulator, shematic from the mts1500.pdf article (Dave Robinson, WW2R, G4FRE)
>
> It is interesting when taking off the bridge on the pcb (two frequency) the frequency

change immediately, it means that the Verticom is receiving the command from PIC but not locking.
>
> Trying to programm any frequency in the Verticom working range, the same thing. Of course, I am using excell sheet for the programming words.
>
> Thanks,
> Adam
>
> --- In 24GHzHam@yahoogroups.com, "ww2r_dave" <ww2r2@> wrote:
> >
> > 1.The LED will go on and stay on when the Verticom is locked up.
> >
> > 2. The verticom is not locked therefore it will not be stable. When locked and the internal reference oscillator has warmed up it will stay within 1kHz for hours
> >
> > Are you applying the 8V and the 12V to the verticom at the same time?
> >
> > Dave
> >
> > ww2r
> >
> >
> > --- In 24GHzHam@yahoogroups.com, "adam" <adam9a4qv@> wrote:
> > >
> > > Hello Dave,
> > >
> > > I built the controller with 12F675 (dual frequency) for the MTS1500-151-01 YIG oscillator but found some problems in operation.
> > >
> > > I think of, damaged YIG purchased trough E-bay....
> > > but let me ask a few questions:
> > >
> > > 1. When in loop the led diode should be off?
> > > (When I switch on the yig LED goes on for a less then a half second then stays off)
> > >
> > > 2. The frequency of my YIG is not stable at all, not even for a narrow FM operation, when listening some signals with transverter(24 GHz) using this YIG for the L.O. the CW signal sound like "scrambled ssb signal" like frequency hopping. Same thing with any programmed frequency.
> > > Switching between the two programmed frequency change the frequency but it is not stable at all, even after 10 minutes when the yig is hot and should be stable enough.
> > >
> > > Any hint from your side?
> > > Thanks,
> > >
> > > Adam 9A4QV
> > >
> >
>

361. Re: Verticom MTS-1500

Yahoo group: 24GHzHam
Date: 2011-11-08 11:42:19 UTC
From: adam
Topic: 354 Message: 361

Hello Philippe,

Thats a hughe job! You did the great job.
I was just thinking to open the Verticom, but the housing and the screws are damaged from one side, and there is a big possibility to damage already bended alien crew head.

I turn the LED properly, no problem with that.
Your idea looks nice.

Will try to modify the value C to check what is going on.
Presently, I have programmed the Verticom to give me 11808 MHz (as the L.O. for the 24ghz x-verter x2+438) and the c value (calculated from the excell sheet) is 415.
Will try to avoid the formulla and manually change the value in the sheet to have right BIN value inserted in the codeword.

I am traveling next week for Nigeria for 4 weeks and will try to do the asembler code and programming asap.

Will let you know here the result.

Thanks a lot again for a nice post

Adam
--- In 24GHzHam@yahoogroups.com, "phb95170" <phk.buisson@...> wrote:
>
>
>
> Hello Adam
>
> I have the same Verticom synthesizer than you and the same problem also. But the LED indicating locking is sometimes on but get off after some minutes. Just a remark about the schematic : this LED is not in the right direction but I suppose you have corrected that !
>
> In order to try to understand why the locking is difficult I have opened the box and it is not an easy job with all these screws often difficult to remove without damaging their head...
>
> I have also unsoldered the flex connecting the YIG to the board to be able to see the bottom side of this board. I took high resolution pictures and tried to get the schematics. Not easy because it is a four layers board but I succeeded partially and now, I am able to understand how it works !
>
> The 52.5 MHz OCXO frequency is multiplied by 2 and by 5 on the board to have a 525 MHz signal. In the microwave part, this frequency is multiplied by 20 to get the offset frequency at 10500 MHz. This one is mixed with the synthesizer output to get Fout - Foffset. It is at low level at the mixer output so there is an 20 dB amplifier on the board followed by a 8 dB attenuator before driving the RF input of the LMX2325 PLL. The OCXO

frequency is also divided by 2 to get the Ref frequency at 26.25 MHz.
>
> There is a coarse and a fine tuning of the YIG. The coarse one is named pretuning in mts1500.pdf and is made by driving one of the main coils (there are 2 main coils !) but this tuning is not controlled by the PLL. The PLL controls the fine tuning by driving the FM coil of the YIG. The fine tuning range is about 80 MHz and if the pretuning is not correct the PLL can be unable to set the right frequency.
>
> I suppose this is why the PLL doesn't lock and I have an idea to test if I am right but I am currently in Japan for two weeks and cannot do it now.
>
> So Adam, can you try to modify the value for pretuning (C) by adding 20 or substracting 20 to the value calculated in order to modify the pretuning by about 40 MHz ?
>
> I have an other idea if it doesn't work but I'll tell you that later.
>
> Best regards.
>
> Philippe
> --- In 24GHzHam@yahoogroups.com, "adam" <adam9a4qv@> wrote:
> >
> > So my Verticom is not locked up, OK.
> >
> > Yes I am applying the 8V and the 12V at the same time, using the the 12V and 8V regulator, shematic from the mts1500.pdf article (Dave Robinson, WW2R, G4FRE)
> >
> > It is interesting when taking off the bridge on the pcb (two frequency) the frequency change immediately, it means that the Verticom is receiving the command from PIC but not locking.
> >
> > Trying to programm any frequency in the Verticom working range, the same thing. Of course, I am using excell sheet for the programming words.
> >
> > Thanks,
> > Adam
> >
> > --- In 24GHzHam@yahoogroups.com, "ww2r_dave" <ww2r2@> wrote:
> > >
> > > 1.The LED will go on and stay on when the Verticom is locked up.
> > >
> > > 2. The verticom is not locked therefore it will not be stable. When locked and the internal reference oscillator has warmed up it will stay within 1kHz for hours
> > >
> > > Are you applying the 8V and the 12V to the verticom at the same time?
> > >
> > > Dave
> > >
> > > ww2r
> > >
> > >
> > > --- In 24GHzHam@yahoogroups.com, "adam" <adam9a4qv@> wrote:

> > > >
> > > > Hello Dave,
> > > >
> > > > I built the controller with 12F675 (dual frequency) for the MTS1500-151-01 YIG oscillator but found some problems in operation.
> > > >
> > > > I think of, damaged YIG purchased trough E-bay....
> > > > but let me ask a few questions:
> > > >
> > > > 1. When in loop the led diode should be off?
> > > > (When I switch on the yig LED goes on for a less then a half second then stays off)
> > > >
> > > > 2. The frequency of my YIG is not stable at all, not even for a narrow FM operation, when listening some signals with transverter(24 GHz) using this YIG for the L.O. the CW signal sound like "scrambled ssb signal" like frequency hopping. Same thing with any programmed frequency.
> > > > Switching between the two programmed frequency change the frequency but it is not stable at all, even after 10 minutes when the yig is hot and should be stable enough.
> > > >
> > > > Any hint from your side?
> > > > Thanks,
> > > >
> > > > Adam 9A4QV
> > > >
> > >
> >
>

362. Re: Verticom MTS-1500

Yahoo group: 24GHzHam
Date: 2011-11-09 04:29:22 UTC
From: phb95170
Topic: 354 Message: 362

Hello Adam

To modify the C value you will have just to modify the formula in the Excel file :

In case B9 replace =ENT(512-H2*(G2-J2)+0.5) by =ENT(512-H2*(G2-J2)+0.5) + 20 or by =ENT(512-H2*(G2-J2)+0.5) - 20.

Try both because I am not sure of the right direction !
Good luck !

Philippe

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> Hello Philippe,
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363. Re: Verticom MTS-1500

Yahoo group: 24GHzHam
Date: 2011-11-09 04:40:06 UTC
From: phb95170
Topic: 354 Message: 363

Hello Dave

You said that the Verticom stays within 1kHz for hours when locked but it depends of the frequency of the OCXO.

Mine was 750 Hz higher than the nominal 52.5 MHz frequency. Looking at the tuning pin I saw it was left open with a voltage measured at about 2.7 V (internal bias, I suppose).

After connecting the tuning pin at Gnd, I got 52.5 MHz + 200 Hz. I cannot go lower because I can't apply a negative voltage ! So at 12 GHz I will be about 46 kHz higher than wished.

Best regards.

Philippe

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364. Re: Verticom MTS-1500

Yahoo group: 24GHzHam
Date: 2011-11-09 07:35:30 UTC
From: adam
Topic: 354 Message: 364

Hello Philippe,

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If I remember well, my yig was always higher in the frequency trying to lock (about 20 MHz) so going down for 40 Mhz can maybe solve the problem. Anyhow, as we have possibility to program two frequencies, one will be with the 40MHz lower and the other with the 40MHz higher value.

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365. Re: Verticom MTS-1500

Yahoo group: 24GHzHam
Date: 2011-11-09 13:20:30 UTC
From: adam
Topic: 354 Message: 365

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I did try modifying C with value -20 and +20, as well as -40 and +40 so shifting +/- 40 and 80 Mhz but the same thing as before, a two short blink of led at the begining and no lock.

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366. Re: Verticom MTS-1500

Yahoo group: 24GHzHam
Date: 2011-11-09 13:56:04 UTC
From: phb95170
Topic: 354 Message: 366

Unfortunately the B plan is not a software one but a hardware one and not an easy one !

I told you that there is an amplifier at the output of the mixer. It's a UPC2709 with about 20 dB gain. It is followed by a Pi attenuator about 8 dB so the whole gain is about 12 dB. I have measured -17 dBm at the output of the amplifier so it means only -25 dBm at the LMX2325 RF input. That is below the limit given by the datasheet. I don't know why the level is so low. Is there some element out of order or is it a design weakness ?

I have removed the attenuator and replaced it by a strap and I think that the LED is more often On but it is subjective ...

My intention was to replace the amplifier by a 30 dB type like the UPC3225 in order to get 10 dB extra gain but as you can imagine it's not very easy, the device beeing very tiny !

Do you have an microwave frequency counter to be able to measure the output frequency with the different programmations you have made ? If yes, I would be interested by the results to understand better how it works!. I don't have such a counter !

Best regards.

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> > > > Thanks a lot again for a nice post
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> > > > > Hello Adam
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> > > > > So Adam, can you try to modify the value for pretuning (C) by adding 20 or substracting 20 to the value calculated in order to modify the pretuning by about 40 MHz ?
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> > > > > Best regards.
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> > > > > Philippe
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> > > > > > So my Verticom is not locked up, OK.
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> > > > > > Yes I am applying the 8V and the 12V at the same time, using the the 12V and 8V regulator, shematic from the mts1500.pdf article (Dave Robinson, WW2R, G4FRE)
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> > > > > > It is interesting when taking off the bridge on the pcb (two frequency) the frequency change immediately, it means that the Verticom is receiving the command from PIC but not locking.

> > > > > >
> > > > > > Trying to programm any frequency in the Verticom working range, the same thing. Of course, I am using excell sheet for the programming words.
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> > > > > > Thanks,
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> > > > > > > Any hint from your side?
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367. Re: Verticom MTS-1500

Yahoo group: 24GHzHam
Date: 2011-11-09 19:50:51 UTC
From: ww2r_dave
Topic: 354 Message: 367

I just uploaded a document with the correct LED orientation to the files area

Dave

g4fre

--- In 24GHzHam@yahoogroups.com, "phb95170" <phk.buisson@...> wrote:
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> Hello Adam
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368. Re: Verticom MTS-1500

Yahoo group: 24GHzHam
Date: 2011-11-09 19:59:12 UTC
From: adam
Topic: 354 Message: 368

Hello Philippe,

Hm, where to start from, maybe just to say that there is something odd with the YIG I have...

1. I programmed pic with the WORDS from the excell sheets for the frequency 11805, not touching the C value.
No lock obtained and measuring the output frequency of +/- 11876 MHz.

2. Programmed pic with the C value lower than calculated for 36 (72 Mhz). After switching on the Verticom, 10 seconds and LED start to light and finally after 20 second the LED i constantly ON.
The output frequency is not as programmed, and it is not locked, listening the signal, this can not be used not even for the FM, just a wide noise, and the LED is still on.

3. Changing the C value in range up to +/-60 (+/- 120 Mhz) give just the odd output frequency reference from the 11876. No lock at all.

4. Approaching to the 12000 MHz the output level is going down (just 2-3dbm).

5. The highest level is at the begining of the band little bit higher than 11000 MHz (but not more than 7dbm)

6. at the center of the band 11600 the output power is cca 5dbm

7. Supply power after the stabiliser is 7.8V and 11.8V

Lower power than expected, odd frequencies, no lock, wide phase noise leeds to conclusion that the YIG is damaged and not working properly.
All tests are performed with a few PIC microcontrolers.

Adam

--- In 24GHzHam@yahoogroups.com, "phb95170" <phk.buisson@...> wrote:
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> Unfortunately the B plan is not a software one but a hardware one and not an easy one !
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> I told you that there is an amplifier at the output of the mixer. It's a UPC2709 with about 20 dB gain. It is followed by a Pi attenuator about 8 dB so the whole gain is about 12 dB. I have measured -17 dBm at the output of the amplifier so it means only -25 dBm at the LMX2325 RF input. That is below the limit given by the datasheet. I don't know why the level is so low. Is there some element out of order or is it a design weakness ?
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> I have removed the attenuator and replaced it by a strap and I think that the LED is more

often On but it is subjective ...
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> My intention was to replace the amplifier by a 30 dB type like the UPC3225 in order to get 10 dB extra gain but as you can imagine it's not very easy, the device beeing very tiny !
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> Do you have an microwave frequency counter to be able to measure the output frequency with the different programmations you have made ? If yes, I would be interested by the results to understand better how it works!. I don't have such a counter !
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> > I did try modifying C with value -20 and +20, as well as -40 and +40 so shifting +/- 40 and 80 Mhz but the same thing as before, a two short blink of led at the begining and no lock.
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> > Philippe, lets go with "plan B" while my programmer is still hot ;-)
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369. Re: Verticom MTS-1500

Yahoo group: 24GHzHam
Date: 2011-11-10 01:55:33 UTC
From: phb95170
Topic: 354 Message: 369

Hello Adam

I am not sure to well understand maybe because I am French and my english is poor ...

When programming 11805 MHz you got 11876 MHz or 71 MHz too high.
When using C - 36 (415 - 36) which frequency did you get : about 11805 or something else ?

When you modify C, does the frequency is modified accordingly at about 2 MHz variation for Each increment or decrement of C ?

If the answer is yes, I think that only the pretuning is working but not the fine tuning controlled by the PLL. I suppose that the control voltage of the FM coil stays at zero maybe for the reason I explained in my last email.

When you are near the frequency you have programmed, the LED goes on but the loop is not really locked.

I am not sure that your YIG is damaged. The low power can be due to one of the amplifiers following the YIG. You can see them on the picture in MTS1500 photos on the site.

From now you have to wait that I try the modifications of amplifier to confirm my intuition but it won't be before two or three weeks !

Best regards.

Philippe

--- In 24GHzHam@yahoogroups.com, "adam" <adam9a4qv@...> wrote:
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> Hello Philippe,
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> Hm, where to start from, maybe just to say that there is something odd with the YIG I have...
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> No lock obtained and measuring the output frequency of +/- 11876 MHz.
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> 4. Approaching to the 12000 MHz the output level is going down (just 2-3dbm).
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> 6. at the center of the band 11600 the output power is cca 5dbm
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> 7. Supply power after the stabiliser is 7.8V and 11.8V
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> Lower power than expected, odd frequencies, no lock, wide phase noise leeds to conclusion that the YIG is damaged and not working properly.
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> > > > > > > I suppose this is why the PLL doesn't lock and I have an idea to test if I am right but I am currently in Japan for two weeks and cannot do it now.
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> > > > > > > So Adam, can you try to modify the value for pretuning (C) by adding 20 or substracting 20 to the value calculated in order to modify the pretuning by about 40 MHz ?
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370. Re: Verticom MTS-1500

Yahoo group: 24GHzHam
Date: 2011-11-10 08:35:11 UTC
From: adam
Topic: 354 Message: 370

Philippe, all OK with your English..maybe mine is not OK 'cause I am Croatian :-)

You did understand well.
For the coarse and C value it is as you said, for every c variation we have 2Mhz variation in the coarse, so going down for c-36 I am going down for 72 MHz to have around 11805. Actually I program two frequencies C-36 and C-37 and both are "LED locking" the Verticom. This "LED on" state is cca 2MHz wide, the output frequency is drifting within 2MHz. After that the LED start blinking fast rate and then slower, finally losing the "lock" and after some seconds it comes back the same way and rate. I do have a small video on that, but I think you know how it looks like.

I agree with your statement, just one thing is not so clear. If the fine tuning or PLL is not working, why there is so big phase noise in the output signal?

I will wait for your surgery on the YIG to see if this can solve the problem. Till then we have to wait.

Adam

--- In 24GHzHam@yahoogroups.com, "phb95170" <phk.buisson@...> wrote:
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> Hello Adam
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> I am not sure to well understand maybe because I am French and my english is poor ...
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> When using C - 36 (415 - 36) which frequency did you get : about 11805 or something else ?
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> When you modify C, does the frequency is modified accordingly at about 2 MHz variation for Each increment or decrement of C ?
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> If the answer is yes, I think that only the pretuning is working but not the fine tuning controlled by the PLL. I suppose that the control voltage of the FM coil stays at zero maybe for the reason I explained in my last email.
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> When you are near the frequency you have programmed, the LED goes on but the loop is not really locked.
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> From now you have to wait that I try the modifications of amplifier to confirm my

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> > 3. Changing the C value in range up to +/-60 (+/- 120 Mhz) give just the odd output frequency reference from the 11876. No lock at all.
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> > > I told you that there is an amplifier at the output of the mixer. It's a UPC2709 with
about 20 dB gain. It is followed by a Pi attenuator about 8 dB so the whole gain is about
12 dB. I have measured -17 dBm at the output of the amplifier so it means only -25 dBm at
the LMX2325 RF input. That is below the limit given by the datasheet. I don't know why the
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> > > > Well, I have to say that this attempt with changing C did not work for me :-(
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> > > > I did try modifying C with value -20 and +20, as well as -40 and +40 so shifting
+/- 40 and 80 Mhz but the same thing as before, a two short blink of led at the begining
and no lock.
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> > > > > If I remember well, my yig was always higher in the frequency trying to lock
(about 20 MHz) so going down for 40 Mhz can maybe solve the problem. Anyhow, as we have

possibility to program two frequencies, one will be with the 40MHz lower and the other with the 40MHz higher value.
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> > > > > > In case B9 replace =ENT(512-H2*(G2-J2)+0.5) by =ENT(512-H2*(G2-J2)+0.5) + 20 or by =ENT(512-H2*(G2-J2)+0.5) - 20.
> > > > > >
> > > > > > Try both because I am not sure of the right direction !
> > > > > > Good luck !
> > > > > >
> > > > > > Philippe
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> > > > > >
> > > > > > --- In 24GHzHam@yahoogroups.com, "adam" <adam9a4qv@> wrote:
> > > > > > >
> > > > > > > Hello Philippe,
> > > > > > >
> > > > > > > Thats a hughe job! You did the great job.
> > > > > > > I was just thinking to open the Verticom, but the housing and the screws are damaged from one side, and there is a big possibility to damage already bended alien crew head.
> > > > > > >
> > > > > > > I turn the LED properly, no problem with that.
> > > > > > > Your idea looks nice.
> > > > > > >
> > > > > > > Will try to modify the value C to check what is going on.
> > > > > > > Presently, I have programmed the Verticom to give me 11808 MHz (as the L.O. for the 24ghz x-verter x2+438) and the c value (calculated from the excell sheet) is 415.
> > > > > > > Will try to avoid the formulla and manually change the value in the sheet to have right BIN value inserted in the codeword.
> > > > > > >
> > > > > > > I am traveling next week for Nigeria for 4 weeks and will try to do the asembler code and programming asap.
> > > > > > >
> > > > > > > Will let you know here the result.
> > > > > > >
> > > > > > > Thanks a lot again for a nice post
> > > > > > >
> > > > > > > Adam
> > > > > > > --- In 24GHzHam@yahoogroups.com, "phb95170" <phk.buisson@> wrote:
> > > > > > > >

> > > > > > > >
> > > > > > > >
> > > > > > > > Hello Adam
> > > > > > > >
> > > > > > > > I have the same Verticom synthesizer than you and the same problem also. But the LED indicating locking is sometimes on but get off after some minutes. Just a remark about the schematic : this LED is not in the right direction but I suppose you have corrected that !
> > > > > > > >
> > > > > > > > In order to try to understand why the locking is difficult I have opened the box and it is not an easy job with all these screws often difficult to remove without damaging their head...
> > > > > > > >
> > > > > > > > I have also unsoldered the flex connecting the YIG to the board to be able to see the bottom side of this board. I took high resolution pictures and tried to get the schematics. Not easy because it is a four layers board but I succeeded partially and now, I am able to understand how it works !
> > > > > > > >
> > > > > > > > The 52.5 MHz OCXO frequency is multiplied by 2 and by 5 on the board to have a 525 MHz signal. In the microwave part, this frequency is multiplied by 20 to get the offset frequency at 10500 MHz. This one is mixed with the synthesizer output to get Fout - Foffset. It is at low level at the mixer output so there is an 20 dB amplifier on the board followed by a 8 dB attenuator before driving the RF input of the LMX2325 PLL. The OCXO frequency is also divided by 2 to get the Ref frequency at 26.25 MHz.
> > > > > > > >
> > > > > > > > There is a coarse and a fine tuning of the YIG. The coarse one is named pretuning in mts1500.pdf and is made by driving one of the main coils (there are 2 main coils !) but this tuning is not controlled by the PLL. The PLL controls the fine tuning by driving the FM coil of the YIG. The fine tuning range is about 80 MHz and if the pretuning is not correct the PLL can be unable to set the right frequency.
> > > > > > > >
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> > > > > > > > > It is interesting when taking off the bridge on the pcb (two frequency) the frequency change immediately, it means that the Verticom is receiving the command from PIC but not locking.
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> > > > > > > > > Trying to programm any frequency in the Verticom working range, the same thing. Of course, I am using excell sheet for the programming words.
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371. Re: Verticom MTS-1500

Yahoo group: 24GHzHam
Date: 2011-11-11 00:34:55 UTC
From: phb95170
Topic: 354 Message: 371

Adam, any of us has english as a mother language but we are not so bad, aren't we ?

I don't know why you have such a big phase noise with your YIG. Does anybody have an idea on this topic ?

Your measurements show that the coarse tuning is about 80 MHz higher than the programmed frequency. It is after the task of the PLL to put the frequency at the programmed one but its tuning range is about the same so, in some temperature conditions, the locking must be difficult even impossible.

Before practicing surgery, as you say, I will perform measurements to see if, in my case, when the LED is on, the loop is locked or not.

Best regards.

Philippe

--- In 24GHzHam@yahoogroups.com, "adam" <adam9a4qv@...> wrote:
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> Philippe, all OK with your English..maybe mine is not OK 'cause I am Croatian :-)
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> > > > > > > In case B9 replace =ENT(512-H2*(G2-J2)+0.5) by =ENT(512-H2*(G2-J2)+0.5) + 20 or by =ENT(512-H2*(G2-J2)+0.5) - 20.
> > > > > > >
> > > > > > > Try both because I am not sure of the right direction !
> > > > > > > Good luck !
> > > > > > >
> > > > > > > Philippe
> > > > > > >
> > > > > > >
> > > > > > > --- In 24GHzHam@yahoogroups.com, "adam" <adam9a4qv@> wrote:
> > > > > > > >
> > > > > > > > Hello Philippe,
> > > > > > > >

> > > > > > > > Thats a hughe job! You did the great job.
> > > > > > > > I was just thinking to open the Verticom, but the housing and the screws are damaged from one side, and there is a big possibility to damage already bended alien crew head.
> > > > > > > >
> > > > > > > > I turn the LED properly, no problem with that.
> > > > > > > > Your idea looks nice.
> > > > > > > >
> > > > > > > > Will try to modify the value C to check what is going on.
> > > > > > > > Presently, I have programmed the Verticom to give me 11808 MHz (as the L.O. for the 24ghz x-verter x2+438) and the c value (calculated from the excell sheet) is 415.
> > > > > > > > Will try to avoid the formulla and manually change the value in the sheet to have right BIN value inserted in the codeword.
> > > > > > > >
> > > > > > > > I am traveling next week for Nigeria for 4 weeks and will try to do the asembler code and programming asap.
> > > > > > > >
> > > > > > > > Will let you know here the result.
> > > > > > > >
> > > > > > > > Thanks a lot again for a nice post
> > > > > > > >
> > > > > > > > Adam
> > > > > > > > --- In 24GHzHam@yahoogroups.com, "phb95170" <phk.buisson@> wrote:
> > > > > > > >
> > > > > > > >
> > > > > > > >
> > > > > > > > Hello Adam
> > > > > > > >
> > > > > > > > I have the same Verticom synthesizer than you and the same problem also. But the LED indicating locking is sometimes on but get off after some minutes. Just a remark about the schematic : this LED is not in the right direction but I suppose you have corrected that !
> > > > > > > >
> > > > > > > > In order to try to understand why the locking is difficult I have opened the box and it is not an easy job with all these screws often difficult to remove without damaging their head...
> > > > > > > >
> > > > > > > > I have also unsoldered the flex connecting the YIG to the board to be able to see the bottom side of this board. I took high resolution pictures and tried to get the schematics. Not easy because it is a four layers board but I succeeded partially and now, I am able to understand how it works !
> > > > > > > >
> > > > > > > > The 52.5 MHz OCXO frequency is multiplied by 2 and by 5 on the board to have a 525 MHz signal. In the microwave part, this frequency is multiplied by 20 to get the offset frequency at 10500 MHz. This one is mixed with the synthesizer output to get Fout - Foffset. It is at low level at the mixer output so there is an 20 dB amplifier on the board followed by a 8 dB attenuator before driving the RF input of the LMX2325 PLL. The OCXO frequency is also divided by 2 to get the Ref frequency at 26.25 MHz.
> > > > > > > >
> > > > > > > > There is a coarse and a fine tuning of the YIG. The coarse one is named

pretuning in mts1500.pdf and is made by driving one of the main coils (there are 2 main coils !) but this tuning is not controlled by the PLL. The PLL controls the fine tuning by driving the FM coil of the YIG. The fine tuning range is about 80 MHz and if the pretuning is not correct the PLL can be unable to set the right frequency.
> > > > > > > > >
> > > > > > > > > I suppose this is why the PLL doesn't lock and I have an idea to test if I am right but I am currently in Japan for two weeks and cannot do it now.
> > > > > > > > >
> > > > > > > > > So Adam, can you try to modify the value for pretuning (C) by adding 20 or substracting 20 to the value calculated in order to modify the pretuning by about 40 MHz ?
> > > > > > > > >
> > > > > > > > > I have an other idea if it doesn't work but I'll tell you that later.
> > > > > > > > >
> > > > > > > > > Best regards.
> > > > > > > > >
> > > > > > > > > Philippe
> > > > > > > > > --- In 24GHzHam@yahoogroups.com, "adam" <adam9a4qv@> wrote:
> > > > > > > > >
> > > > > > > > > So my Verticom is not locked up, OK.
> > > > > > > > >
> > > > > > > > > Yes I am applying the 8V and the 12V at the same time, using the the 12V and 8V regulator, shematic from the mts1500.pdf article (Dave Robinson, WW2R, G4FRE)
> > > > > > > > >
> > > > > > > > > It is interesting when taking off the bridge on the pcb (two frequency) the frequency change immediately, it means that the Verticom is receiving the command from PIC but not locking.
> > > > > > > > >
> > > > > > > > > Trying to programm any frequency in the Verticom working range, the same thing. Of course, I am using excell sheet for the programming words.
> > > > > > > > >
> > > > > > > > > Thanks,
> > > > > > > > > Adam
> > > > > > > > >
> > > > > > > > > --- In 24GHzHam@yahoogroups.com, "ww2r_dave" <ww2r2@> wrote:
> > > > > > > > >
> > > > > > > > > 1.The LED will go on and stay on when the Verticom is locked up.
> > > > > > > > >
> > > > > > > > > 2. The verticom is not locked therefore it will not be stable. When locked and the internal reference oscillator has warmed up it will stay within 1kHz for hours
> > > > > > > > >
> > > > > > > > > Are you applying the 8V and the 12V to the verticom at the same time?
> > > > > > > > >
> > > > > > > > > Dave
> > > > > > > > >
> > > > > > > > > ww2r
> > > > > > > > >
> > > > > > > > >
> > > > > > > > > --- In 24GHzHam@yahoogroups.com, "adam" <adam9a4qv@> wrote:
> > > > > > > > >

> > > > > > > > > > > > Hello Dave,
> > > > > > > > > > > > >
> > > > > > > > > > > > > I built the controller with 12F675 (dual frequency) for the MTS1500-151-01 YIG oscillator but found some problems in operation.
> > > > > > > > > > > > >
> > > > > > > > > > > > > I think of, damaged YIG purchased trough E-bay....
> > > > > > > > > > > > > but let me ask a few questions:
> > > > > > > > > > > > >
> > > > > > > > > > > > > 1. When in loop the led diode should be off?
> > > > > > > > > > > > > (When I switch on the yig LED goes on for a less then a half second then stays off)
> > > > > > > > > > > > >
> > > > > > > > > > > > > 2. The frequency of my YIG is not stable at all, not even for a narrow FM operation, when listening some signals with transverter(24 GHz) using this YIG for the L.O. the CW signal sound like "scrambled ssb signal" like frequency hopping. Same thing with any programmed frequency.
> > > > > > > > > > > > > Switching betwean the two programmed frequency change the frequency but it is not stable at all, even after 10 minutes when the yig is hot and should be stable enough.
> > > > > > > > > > > > >
> > > > > > > > > > > > > Any hint from your side?
> > > > > > > > > > > > > Thanks,
> > > > > > > > > > > > >
> > > > > > > > > > > > > Adam 9A4QV
> > > > > > > > > > > > >
> > > > > > > > > > > >
> > > > > > > > > > >
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> > > > > > > > >
> > > > > > > >
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> > > > > >
> > > > >
> > > >
>

372. Re: [24GHzHam] Re: Verticom MTS-1500

Yahoo group: 24GHzHam
Date: 2011-11-11 00:54:49 UTC
From: Thomas S. Knutsen
Topic: 354 Message: 372

2011/11/11 phb95170 <phk.buisson@...>

> **
>
>
> Adam, any of us has english as a mother language but we are not so bad,
> aren't we ?
>
I'm Norwegian and understand what you are saying, so it's not bad!

> I don't know why you have such a big phase noise with your YIG. Does
> anybody have an idea on this topic ?
>
It may be leaking capacitors in the power supply for the YIG. Hook an scope
on it and take a look at the DC.

73 de Thomas LA3PNA/AE5YS

--

Please avoid sending me Word or PowerPoint attachments.
See <http://www.gnu.org/philosophy/no-word-attachments.html>

373. Re: Verticom MTS-1500

Yahoo group: 24GHzHam
Date: 2011-11-12 19:09:24 UTC
From: adam
Topic: 354 Message: 373

Hello Tomas,

Thanks for the hint, but the power supply looks fine, the capacitors are SMD close to stabiliser and this partshould be ok.

Adam

--- In 24GHzHam@yahoogroups.com, "Thomas S. Knutsen" <la3pna@...> wrote:
>
> 2011/11/11 phb95170 <phk.buisson@...>
>
> > **
> >
> >
> > Adam, any of us has english as a mother language but we are not so bad,
> > aren't we ?
> >
> I'm Norwegian and understand what you are saying, so it's not bad!
>
>
> > I don't know why you have such a big phase noise with your YIG. Does
> > anybody have an idea on this topic ?
> >
> It may be leaking capacitors in the power supply for the YIG. Hook an scope
> on it and take a look at the DC.
>
> 73 de Thomas LA3PNA/AE5YS
>
> --
>
> Please avoid sending me Word or PowerPoint attachments.
> See <http://www.gnu.org/philosophy/no-word-attachments.html>
>

374. Re: [24GHzHam] Re: Verticom MTS-1500

Yahoo group: 24GHzHam
Date: 2011-11-12 20:31:37 UTC
From: Zack Widup
Topic: 354 Message: 374

As an aside to the mainstream discussion here, I just found a file of
a presentation that was done by WW2R which showed using an external
52.5 MHz DFS LO based on a 10 MHz OCXO. Is there any info out there on
how and where to connect an external 52.5 MHz reference that might be
more accurate and stable than the one built into the unit?

73, Zack W9SZ

On 11/12/11, adam <adam9a4qv@...> wrote:
>
> Hello Tomas,
>
> Thanks for the hint, but the power supply looks fine, the capacitors are SMD
> close to stabiliser and this partshould be ok.
>
> Adam
>
> --- In 24GHzHam@yahoogroups.com, "Thomas S. Knutsen" <la3pna@...> wrote:
>>
>> 2011/11/11 phb95170 <phk.buisson@...>
>>
>> > **
>> >
>> >
>> > Adam, any of us has english as a mother language but we are not so bad,
>> > aren't we ?
>> >
>> I'm Norwegian and understand what you are saying, so it's not bad!
>>
>>
>> > I don't know why you have such a big phase noise with your YIG. Does
>> > anybody have an idea on this topic ?
>> >
>> It may be leaking capacitors in the power supply for the YIG. Hook an
>> scope
>> on it and take a look at the DC.
>>
>> 73 de Thomas LA3PNA/AE5YS
>>
>> --
>>
>> Please avoid sending me Word or PowerPoint attachments.
>> See <http://www.gnu.org/philosophy/no-word-attachments.html>
>>
>

>
>

375. Re: Verticom MTS-1500

Yahoo group: 24GHzHam
Date: 2011-11-13 17:29:33 UTC
From: ww2r_dave
Topic: 354 Message: 375

You must mean

http://g4fre.com/134g.pdf?

I literally smashed up the onboard oscillator (its has serious plated through holes holding it in place, would need a blowtorch to remove it) and fed the output of a G4HUP rev 1 dfs into the mts1500

52.5MHz = (10*5)+ (10/4) MHz

Dave

--- In 24GHzHam@yahoogroups.com, Zack Widup <w9sz.zack@...> wrote:
>
> As an aside to the mainstream discussion here, I just found a file of
> a presentation that was done by WW2R which showed using an external
> 52.5 MHz DFS LO based on a 10 MHz OCXO. Is there any info out there on
> how and where to connect an external 52.5 MHz reference that might be
> more accurate and stable than the one built into the unit?
>
> 73, Zack W9SZ
>
>
> On 11/12/11, adam <adam9a4qv@...> wrote:
> >
> > Hello Tomas,
> >
> > Thanks for the hint, but the power supply looks fine, the capacitors are SMD
> > close to stabiliser and this partshould be ok.
> >
> > Adam
> >
> > --- In 24GHzHam@yahoogroups.com, "Thomas S. Knutsen" <la3pna@> wrote:
> >>
> >> 2011/11/11 phb95170 <phk.buisson@>
> >>
> >> > **
> >> >
> >> >
> >> > Adam, any of us has english as a mother language but we are not so bad,
> >> > aren't we ?
> >> >
> >> I'm Norwegian and understand what you are saying, so it's not bad!
> >>
> >>
> >> > I don't know why you have such a big phase noise with your YIG. Does

> >> > anybody have an idea on this topic ?
> >> >
> >> It may be leaking capacitors in the power supply for the YIG. Hook an
> >> scope
> >> on it and take a look at the DC.
> >>
> >> 73 de Thomas LA3PNA/AE5YS
> >>
> >> --
> >>
> >> Please avoid sending me Word or PowerPoint attachments.
> >> See <http://www.gnu.org/philosophy/no-word-attachments.html>
> >>
> >
> >
> >
>

376. Re: [24GHzHam] Re: Verticom MTS-1500

Yahoo group: 24GHzHam
Date: 2011-11-13 18:40:53 UTC
From: Zack Widup
Topic: 354 Message: 376

Hi Dave,

Yes, that's the file I was referring to. I didn't realize it was so difficult to get that oscillator out. I'll have to see what I can do but I think the mod would be an improvement on the accuracy and stability.

73, Zack W9SZ

On Sun, Nov 13, 2011 at 11:29 AM, ww2r_dave <ww2r2@...> wrote:

> **
>
>
> You must mean
>
> http://g4fre.com/134g.pdf?
>
> I literally smashed up the onboard oscillator (its has serious plated
> through holes holding it in place, would need a blowtorch to remove it) and
> fed the output of a G4HUP rev 1 dfs into the mts1500
>
> 52.5MHz = (10*5)+ (10/4) MHz
>
> Dave
>
>
> --- In 24GHzHam@yahoogroups.com, Zack Widup <w9sz.zack@...> wrote:
> >
> > As an aside to the mainstream discussion here, I just found a file of
> > a presentation that was done by WW2R which showed using an external
> > 52.5 MHz DFS LO based on a 10 MHz OCXO. Is there any info out there on
> > how and where to connect an external 52.5 MHz reference that might be
> > more accurate and stable than the one built into the unit?
> >
> > 73, Zack W9SZ
> >
> >
> > On 11/12/11, adam <adam9a4qv@...> wrote:
> > >
> > > Hello Tomas,
> > >
> > > Thanks for the hint, but the power supply looks fine, the capacitors
> are SMD
> > > close to stabiliser and this partshould be ok.
> > >
> > > Adam

> > >
> > > --- In 24GHzHam@yahoogroups.com, "Thomas S. Knutsen" <la3pna@> wrote:
> > >>
> > >> 2011/11/11 phb95170 <phk.buisson@>
>
> > >>
> > >> > **
> > >> >
> > >> >
> > >> > Adam, any of us has english as a mother language but we are not so
> bad,
> > >> > aren't we ?
> > >> >
> > >> I'm Norwegian and understand what you are saying, so it's not bad!
> > >>
> > >>
> > >> > I don't know why you have such a big phase noise with your YIG. Does
> > >> > anybody have an idea on this topic ?
> > >> >
> > >> It may be leaking capacitors in the power supply for the YIG. Hook an
> > >> scope
> > >> on it and take a look at the DC.
> > >>
> > >> 73 de Thomas LA3PNA/AE5YS
> > >>
> > >> --
> > >>
> > >> Please avoid sending me Word or PowerPoint attachments.
> > >> See <http://www.gnu.org/philosophy/no-word-attachments.html>
> > >>
> > >
> > >
> > >
> >
>
>
>

377. Re: Verticom MTS-1500

Yahoo group: 24GHzHam
Date: 2011-12-01 21:41:16 UTC
From: phb95170
Topic: 354 Message: 377

Hello everybody

Some news from the french Verticom MTS1500 front !

I have performed some new measurements and I was wrong about the signal level at the RF input of the LMX2325. Probably the cable I have used previously was damaged because now I measure about -10 dBm at the RF input and that's fine. So I didn't have to practice surgery to replace the amplifier by an other one with more gain.

When I power up the Verticom, the PLL locks for about 5 minutes and then becomes unlocked. I have looked to the loop voltage, driving the YIG FM coil, and it begins at 0,2 V then decreases slowly becoming more and more noisy and finally reach 0 V.

When I put a finger in an area near the input of the amplifier, I am able to make the loop locking. I suppose that the loop tries to lock on a bad frequency. In fact, the offset 10.5 GHz frequency is made by multiplying the 52.5 MHz by 2 then by 5 then by 20 and maybe there is some spurs every 52.5 MHz around 10.5 GHz.

There is a passband filter at 525 MHz on the board and I have tried to modify slightly the tuning with the central variable capacitor and ... I succeeded to make the loop locking but the tuning is very sensitive. Now I have something stable at two frequencies I have programmed : 11800 and 11900 MHz. I hope it will stay like that !

That's all for tonight (22 : 40 in France now)

Best regards.

Philippe

--- In 24GHzHam@yahoogroups.com, Zack Widup <w9sz.zack@...> wrote:
>
> Hi Dave,
>
> Yes, that's the file I was referring to. I didn't realize it was so
> difficult to get that oscillator out. I'll have to see what I can do but I
> think the mod would be an improvement on the accuracy and stability.
>
> 73, Zack W9SZ
>
> On Sun, Nov 13, 2011 at 11:29 AM, ww2r_dave <ww2r2@...> wrote:
>
> > **
> >
> >
> > You must mean
> >
> > http://g4fre.com/134g.pdf?

> >
> > I literally smashed up the onboard oscillator (its has serious plated
> > through holes holding it in place, would need a blowtorch to remove it) and
> > fed the output of a G4HUP rev 1 dfs into the mts1500
> >
> > 52.5MHz = (10*5)+ (10/4) MHz
> >
> > Dave
> >
> >
> > --- In 24GHzHam@yahoogroups.com, Zack Widup <w9sz.zack@> wrote:
> > >
> > > As an aside to the mainstream discussion here, I just found a file of
> > > a presentation that was done by WW2R which showed using an external
> > > 52.5 MHz DFS LO based on a 10 MHz OCXO. Is there any info out there on
> > > how and where to connect an external 52.5 MHz reference that might be
> > > more accurate and stable than the one built into the unit?
> > >
> > > 73, Zack W9SZ
> > >
> > >
> > > On 11/12/11, adam <adam9a4qv@> wrote:
> > > >
> > > > Hello Tomas,
> > > >
> > > > Thanks for the hint, but the power supply looks fine, the capacitors
> > are SMD
> > > > close to stabiliser and this partshould be ok.
> > > >
> > > > Adam
> > > >
> > > > --- In 24GHzHam@yahoogroups.com, "Thomas S. Knutsen" <la3pna@> wrote:
> > > >>
> > > >> 2011/11/11 phb95170 <phk.buisson@>
> >
> > > >>
> > > >> > **
> > > >> >
> > > >> >
> > > >> > Adam, any of us has english as a mother language but we are not so
> > bad,
> > > >> > aren't we ?
> > > >> >
> > > >> I'm Norwegian and understand what you are saying, so it's not bad!
> > > >>
> > > >>
> > > >> > I don't know why you have such a big phase noise with your YIG. Does
> > > >> > anybody have an idea on this topic ?
> > > >> >
> > > >> It may be leaking capacitors in the power supply for the YIG. Hook an

> > > >> scope
> > > >> on it and take a look at the DC.
> > > >>
> > > >> 73 de Thomas LA3PNA/AE5YS
> > > >>
> > > >> --
> > > >>
> > > >> Please avoid sending me Word or PowerPoint attachments.
> > > >> See <http://www.gnu.org/philosophy/no-word-attachments.html>
> > > >>
> > > >
> > > >
> > > >
> > >
> >
> >
>

378. Seen on The Bay...

Yahoo group: 24GHzHam
Date: 2012-03-15 12:53:44 UTC
From: f5bqp_pfm
Topic: 378 Message: 378

Hi the Gang,

May be a good plan for some of you?...

http://cgi.ebay.fr/DMC-Stratex-23-Ghz-SDH-155mb-tranceiver-/220975900979?pt=BI_Cellular_Optical_Television_Test_Equipment&hash=item337330a933

Many other stuff from this seller.

Best 73's
Pierre-Francois, F5BQP

379. Re: Thales 23 and 26GHz transceiver units

Yahoo group: 24GHzHam
Date: 2012-05-30 20:40:32 UTC
From: grahamstratford62
Topic: 345 Message: 379

Dave,

Do you know anyone who has a Thales 26 GHz unit working? I have a 23 GHz unit working but the output is low. I have been trying to buy another 23 GHz unit but the supply seems to have dried up.

Thanks and 73,

Graham Stratford VE3FHM

--- In 24GHzHam@yahoogroups.com, "Dave" <dave.nelson@...> wrote:
>
> The 24GHz xverter using the Thales transceiver and Elcom synth is fully operational. had its first onair tests on the 31 July with good success
>
>
>
> cheers
> Dave
> VK2TDN
>

380. Microsource MSS-2527-918-84

Yahoo group: 24GHzHam
Date: 2012-05-31 17:22:25 UTC
From: grahamstratford62
Topic: 380 Message: 380

Hello All,

Does anyone on this list know how to program this unit? It has a Qualcomm chip inside it. It contains a YIG and a doubler which gives an output from 25.88 GHz to 27.05 GHz. If I can get it working it would make a good marker for 24 GHz or the YIG could be used as a high side LO for a 24 GHz rig.

Thanks and 73,

Graham VE3FHM

381. RE: [24GHzHam] Microsource MSS-2527-918-84

Yahoo group: 24GHzHam
Date: 2012-05-31 17:33:31 UTC
From: Barry VE4MA
Topic: 380 Message: 381
Attachments: 2 described; binary payloads are missing from this source WARC

Hi Graham,

I think this was posted long ago by a W6 ..I have the information ..just have to find the files.will send directly if you can send your email address to me

Barry VE4MA ve4ma@...

From: 24GHzHam@yahoogroups.com [mailto:24GHzHam@yahoogroups.com] On Behalf Of grahamstratford62
Sent: Thursday, May 31, 2012 12:22 PM
To: 24GHzHam@yahoogroups.com
Subject: [24GHzHam] Microsource MSS-2527-918-84

Hello All,

Does anyone on this list know how to program this unit? It has a Qualcomm chip inside it. It contains a YIG and a doubler which gives an output from 25.88 GHz to 27.05 GHz. If I can get it working it would make a good marker for 24 GHz or the YIG could be used as a high side LO for a 24 GHz rig.

Thanks and 73,

Graham VE3FHM

382. RE: [24GHzHam] Microsource MSS-2527-918-84

Yahoo group: 24GHzHam
Date: 2012-05-31 17:36:34 UTC
From: Barry VE4MA
Topic: 380 Message: 382
Attachments: 2 described; binary payloads are missing from this source WARC

I have the files on hand

Barry

From: 24GHzHam@yahoogroups.com [mailto:24GHzHam@yahoogroups.com] On Behalf Of Barry VE4MA
Sent: Thursday, May 31, 2012 12:34 PM
To: 24GHzHam@yahoogroups.com
Subject: RE: [24GHzHam] Microsource MSS-2527-918-84

Hi Graham,

I think this was posted long ago by a W6 ..I have the information ..just have to find the files.will send directly if you can send your email address to me

Barry VE4MA ve4ma@...

From: 24GHzHam@yahoogroups.com [mailto:24GHzHam@yahoogroups.com] On Behalf Of grahamstratford62
Sent: Thursday, May 31, 2012 12:22 PM
To: 24GHzHam@yahoogroups.com
Subject: [24GHzHam] Microsource MSS-2527-918-84

Hello All,

Does anyone on this list know how to program this unit? It has a Qualcomm chip inside it. It contains a YIG and a doubler which gives an output from 25.88 GHz to 27.05 GHz. If I can get it working it would make a good marker for 24 GHz or the YIG could be used as a high side LO for a 24 GHz rig.

Thanks and 73,

Graham VE3FHM

383. Re: [24GHzHam] Microsource MSS-2527-918-84

Yahoo group: 24GHzHam
Date: 2012-06-01 00:17:48 UTC
From: Luis Cupido
Topic: 380 Message: 383

There is also some stuff made/written by me about those
at the time.

I may try to find it, it was still done at the old QTH
I my suffer a bit to locate them... But I remember I had distributed
it, so maybe others find my stuff first than me ;-)

Luis Cupido.
ct1dmk.

On 5/31/2012 6:33 PM, Barry VE4MA wrote:
>
>
> Hi Graham,
>
> I think this was posted long ago by a W6 ?.I have the information ..just
> have to find the files?will send directly if you can send your email
> address to me
>
> Barry VE4MA ve4ma@...
>
> *From:*24GHzHam@yahoogroups.com [mailto:24GHzHam@yahoogroups.com] *On
> Behalf Of *grahamstratford62
> *Sent:* Thursday, May 31, 2012 12:22 PM
> *To:* 24GHzHam@yahoogroups.com
> *Subject:* [24GHzHam] Microsource MSS-2527-918-84
>
> Hello All,
>
> Does anyone on this list know how to program this unit? It has a
> Qualcomm chip inside it. It contains a YIG and a doubler which gives an
> output from 25.88 GHz to 27.05 GHz. If I can get it working it would
> make a good marker for 24 GHz or the YIG could be used as a high side LO
> for a 24 GHz rig.
>
> Thanks and 73,
>
> Graham VE3FHM
>
>
>
>

384. RE: [24GHzHam] Microsource MSS-2527-918-84

Yahoo group: 24GHzHam
Date: 2012-06-01 01:54:24 UTC
From: Barry VE4MA
Topic: 380 Message: 384

I have forwarded the original files from Norm Gillespie. I recall the correspondence from you...I think it may have concerned using lower reference frequencies than 960 MHz.....I would really have to dig for that also but will have it deep in a hard drive somewhere.

Best 73
Barry VE4MA

-----Original Message-----
From: 24GHzHam@yahoogroups.com [mailto:24GHzHam@yahoogroups.com] On Behalf Of Luis Cupido
Sent: Thursday, May 31, 2012 7:18 PM
To: 24GHzHam@yahoogroups.com
Subject: Re: [24GHzHam] Microsource MSS-2527-918-84

There is also some stuff made/written by me about those at the time.

I may try to find it, it was still done at the old QTH I my suffer a bit to locate them... But I remember I had distributed it, so maybe others find my stuff first than me ;-)

Luis Cupido.
ct1dmk.

On 5/31/2012 6:33 PM, Barry VE4MA wrote:
>
>
> Hi Graham,
>
> I think this was posted long ago by a W6 ..I have the information
> ..just have to find the files.will send directly if you can send your
> email address to me
>
> Barry VE4MA ve4ma@...
>
> *From:*24GHzHam@yahoogroups.com [mailto:24GHzHam@yahoogroups.com] *On
> Behalf Of *grahamstratford62
> *Sent:* Thursday, May 31, 2012 12:22 PM
> *To:* 24GHzHam@yahoogroups.com
> *Subject:* [24GHzHam] Microsource MSS-2527-918-84
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> Hello All,
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> Thanks and 73,
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> Graham VE3FHM
>
>
>
>

Yahoo! Groups Links

385. 3-Stage HEMPT Amplifier - DB6NT Design

Yahoo group: 24GHzHam
Date: 2013-02-12 12:08:21 UTC
From: Doug
Topic: 385 Message: 385

Greetings to all readers on this list!

Today I have completed manufacture and started testing one of the 3-stage 24 GHz HEMPT amplifier similar to that described in DUBUS 4/93 (pages 64,66,68,69) and TECHNIK IV (pages 350,352,354-356). My amplifier is the coaxial version, not waveguide, for input and output.

I have used a PCB purchased direct from the Kuhne company (#11 in their catalogue) and I have milled my own close-fitting aluminium box. The active devices I have used are an NE42484 followed by two MGF1303 stages.

I am interested in comments from folk who may have made one of these amplifier units because, despite painstaking 'snow flaking' (which I have successfully done before on other amplifiers at 24 GHz) I have been unable to realise the specified 20 dB gain described for this amplifier. Using the SA I can 'see' around 10 dB gain between the input and the output of the NE42484 stage but, even though the DC conditions look right for the MGF1303 stages and the output signal does vary as the bias of each stage is adjusted, these stages don't show any amplification.

There are some small differences between the original design and my version of it:

1. Coupling capacitors are all ATC 0.4 pf 0403 types;

2. I have needed to use a total of 18 soldered copper ribbon 'shorts' from the component side to the ground plane [this is ten more than the original diagrams and was needed to quell a strong spurious oscillation at around 7.5 GHz];

3. I have a total of seven M1.6 screws (not just 3!) spread across the board fixing the PCB into the aluminium housing. I haven't yet done the permanent fix of the PCB into the housing using conductive epoxy.

Could it be that one or more of these variations is the cause of the absence of gain in the MGF1303 stages? My intuition thinks not, but the experience of others seems more relevant here!

Can folk suggest another approach to getting this 3-stage amplifier working properly?

Thanks in anticipation of any comments here.

Best 73,

--Doug Friend, VK4OE.

386. Re: [24GHzHam] 3-Stage HEMPT Amplifier - DB6NT Design

Yahoo group: 24GHzHam
Date: 2013-02-12 13:14:16 UTC
From: f1ghb@...
Topic: 385 Message: 386

Hello Doug,

A long time ago I have build DB6NT amplifier with MGF1303

See page 60 of this proceeding :

http://cj.ref-union.net/proceedings/1995/cj95.pdf

The MGF1303 were selected for the higher IDSS

Best 73s
eric

==========

Message du : 12/02/2013 13:08
De : "Doug " <uwaves@...>
A : 24GHzHam@yahoogroups.com
Copie à :
Sujet : [24GHzHam] 3-Stage HEMPT Amplifier - DB6NT Design

  Greetings to all readers on this list!

Today I have completed manufacture and started testing one of the 3-stage 24 GHz HEMPT amplifier similar to that described in DUBUS 4/93 (pages 64,66,68,69) and TECHNIK IV (pages 350,352,354-356). My amplifier is the coaxial version, not waveguide, for input and output.

I have used a PCB purchased direct from the Kuhne company (#11 in their catalogue) and I have milled my own close-fitting aluminium box. The active devices I have used are an NE42484 followed by two MGF1303 stages.

I am interested in comments from folk who may have made one of these amplifier units because, despite painstaking 'snow flaking' (which I have successfully done before on other amplifiers at 24 GHz) I have been unable to realise the specified 20 dB gain described for this amplifier. Using the SA I can 'see' around 10 dB gain between the input and the output of the NE42484 stage but, even though the DC conditions look right for the MGF1303 stages and the output signal does vary as the bias of each stage is adjusted, these stages don't show any amplification.

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Can folk suggest another approach to getting this 3-stage amplifier working properly?

Thanks in anticipation of any comments here.

Best 73,

--Doug Friend, VK4OE.

<!-- #ygrp-mkp { border: 1px solid #d8d8d8; font-family: Arial; margin: 10px 0; padding: 0 10px; } #ygrp-mkp hr { border: 1px solid #d8d8d8; } #ygrp-mkp #hd { color: #628c2a; font-size: 85%; font-weight: 700; line-height: 122%; margin: 10px 0; } #ygrp-mkp #ads { margin-bottom: 10px; } #ygrp-mkp .ad { padding: 0 0; } #ygrp-mkp .ad p { margin: 0; } #ygrp-mkp .ad a { color: #0000ff; text-decoration: none; } #ygrp-sponsor #ygrp-lc { font-family: Arial; } #ygrp-sponsor #ygrp-lc #hd { margin: 10px 0px; font-weight: 700; font-size: 78%; line-height: 122%; } #ygrp-sponsor #ygrp-lc .ad { margin-bottom: 10px; padding: 0 0; } #actions { font-family: Verdana; font-size: 11px; padding: 10px 0; } #activity { background-color: #e0ecee; float: left; font-family: Verdana; font-size: 10px; padding: 10px; } #activity span { font-weight: 700; } #activity span:first-child { text-transform: uppercase; } #activity span a { color: #5085b6; text-decoration: none; } #activity span span { color: #ff7900; } #activity span .underline { text-decoration: underline; } .attach { clear: both; display: table; font-family: Arial; font-size: 12px; padding: 10px 0; width: 400px; } .attach div a { text-decoration: none; } .attach img { border: none; padding-right: 5px; } .attach label { display: block; margin-bottom: 5px; } .attach label a { text-decoration: none; } blockquote { margin: 0 0 0 4px; } .bold { font-family: Arial; font-size: 13px; font-weight: 700; } .bold a { text-decoration: none; } dd.last p a { font-family: Verdana; font-weight: 700; } dd.last p span { margin-right: 10px; font-family: Verdana; font-weight: 700; } dd.last p span.yshortcuts { margin-right: 0; } div.attach-table div div a { text-decoration: none; } div.attach-table { width: 400px; } div.file-title a, div.file-title a:active, div.file-title a:hover, div.file-title a:visited { text-decoration: none; } div.photo-title a, div.photo-title a:active, div.photo-title a:hover, div.photo-title a:visited { text-decoration: none; } div#ygrp-mlmsg #ygrp-msg p a span.yshortcuts { font-family: Verdana; font-size: 10px; font-weight: normal; } .green { color: #628c2a; } .MsoNormal { margin: 0 0 0 0; } o { font-size: 0; } #photos div { float: left; width: 72px; } #photos div div { border: 1px solid #666666; height: 62px; overflow: hidden; width: 62px; } #photos div label { color: #666666; font-size: 10px; overflow: hidden; text-align: center; white-space: nowrap; width: 64px; } #reco-category { font-size: 77%; } #reco-desc { font-size: 77%; } .replbq { margin: 4px; } #ygrp-actbar div a:first-child { /* border-right: 0px solid #000;*/ margin-right: 2px; padding-right: 5px; } #ygrp-mlmsg { font-size: 13px; font-family: Arial, helvetica,clean, sans-serif; *font-size: small; *font: x-small; } #ygrp-mlmsg table { font-size: inherit; font: 100%; } #ygrp-mlmsg select, input, textarea { font: 99% Arial, Helvetica, clean, sans-serif; } #ygrp-mlmsg pre, code { font:115% monospace; *font-size:100%; } #ygrp-mlmsg * { line-height: 1.22em; } #ygrp-mlmsg #logo { padding-bottom: 10px; } #ygrp-msg p a { font-family: Verdana; } #ygrp-msg p#attach-count span { color: #1E66AE; font-weight: 700; } #ygrp-reco #reco-head { color: #ff7900; font-weight: 700; } #ygrp-reco { margin-bottom: 20px; padding: 0px; } #ygrp-sponsor #ov li a { font-size: 130%; text-decoration: none; } #ygrp-sponsor #ov li { font-size: 77%;

list-style-type: square; padding: 6px 0; } #ygrp-sponsor #ov ul { margin: 0; padding: 0 0 0 8px; } #ygrp-text { font-family: Georgia; } #ygrp-text p { margin: 0 0 1em 0; } #ygrp-text tt { font-size: 120%; } #ygrp-vital ul li:last-child { border-right: none !important; } -->

387. Re: [24GHzHam] 3-Stage HEMPT Amplifier - DB6NT Design

Yahoo group: 24GHzHam
Date: 2013-02-12 14:17:41 UTC
From: ct1dmk
Topic: 385 Message: 387

Hi Doug,

My design does not differ much from DB6NT's
http://www.qsl.net/ct1dmk/mw_hi.html

and I had no need to many screws or to glue the PCB
to the alu box. I have however the PCB soldered to a 0.3mm
copper sheet that allows both easy and low inductance gnd spots
and solves the mechanical stability issues (just a round hole in the PCB
makes the best gnd you can have).

Tuning is tricky but more than 20dB is possible and NF as low
as 1.2dB should be possible (my prototypes are at 1.4 dB +/-)

> active devices I have used are an NE42484 followed by two MGF1303 stages.

Here I have serious doubts, the MGF1303 do has low gain at 24GHz
My prototypes were always with NE32584 all three stages.
42484s are also ok but I always preferred the 32584.

My experience is that 1303's make good multipliers but not really good
gain stages.

Even so 10dB is certainly too low even for 1303's being used.

73s
Luis Cupido
ct1dmk.

On 2/12/2013 12:08 PM, Doug wrote:
> Greetings to all readers on this list!
>
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> 3-stage 24 GHz HEMPT amplifier similar to that described in DUBUS 4/93
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> catalogue) and I have milled my own close-fitting aluminium box. The
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> amplifier units because, despite painstaking 'snow flaking' (which I
> have successfully done before on other amplifiers at 24 GHz) I have been
> unable to realise the specified 20 dB gain described for this amplifier.
> Using the SA I can 'see' around 10 dB gain between the input and the
> output of the NE42484 stage but, even though the DC conditions look

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> Can folk suggest another approach to getting this 3-stage amplifier
> working properly?
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> Thanks in anticipation of any comments here.
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> Best 73,
>
> --Doug Friend, VK4OE.
>
>

388. Re: [24GHzHam] 3-Stage HEMPT Amplifier - DB6NT Design

Yahoo group: 24GHzHam
Date: 2013-02-12 14:49:32 UTC
From: ct1dmk
Topic: 385 Message: 388

Doug, I see you are referring to the PA
and not to the LNA !!!
My confusion I'm sorry.

Disregard my previous email.
tks.

lc
ct1dmk.

On 2/12/2013 2:17 PM, ct1dmk wrote:
> Hi Doug,
>
> My design does not differ much from DB6NT's
> http://www.qsl.net/ct1dmk/mw_hi.html
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> My experience is that 1303's make good multipliers but not really good
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> Even so 10dB is certainly too low even for 1303's being used.
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> 73s
> Luis Cupido
> ct1dmk.
>
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>> Thanks in anticipation of any comments here.
>>
>> Best 73,
>>
>> --Doug Friend, VK4OE.
>>
>>

389. Re: [24GHzHam] 3-Stage HEMPT Amplifier - DB6NT Design

Yahoo group: 24GHzHam
Date: 2013-02-13 08:06:14 UTC
From: DougF
Topic: 385 Message: 389

Hello Eric, Luis and other readers.

I really appreciate your comments and they gave me some impetus for getting back onto the project to try and make it work better. After all, many must have been successfully made over the years!

Luis, I have used your boards before and I really value the 'tuned' inter-stage coupling capacitors - that must eliminate the tendency that my amplifier had towards oscillating at 7.5 GHz! I also took note of your recommendation towards use of NE32584 devices at 24 GHz.

I'm sorry if I didn't make myself clear in my first description of what I'm doing. I am using the HEMPT amplifier design that uses three devices, with the idea not to be an LNA, but a low lower PA. All I want is about 20 mW output to drive a larger amplifier. I reasoned that a single-device output stage should be more than adequate to achieve this.

Eric, it was good to see your work from all those years ago (je comprends La Langue!). I took the initiative you described there to investigate the Idss of the ten '1303 devices that I have and found them all to be less than what you were finding, with only one of them reaching 40 mA (with +2V applied). That's the one that I transferred to the output stage of my problem amplifier, of course.

Following some thinking about what to do, today I have changed the line-up of devices to a '32584 followed by a '42484 with the 'best' MGF1303 in the output. After engaging in quite a lot of tedious 'snow flaking', I have been able to reach 16 dB gain and am getting just on 20 mW power out before compression.

It was some 'spurious fun' when I first placed the aluminium lid in place, but a chunk of lossy rubber squeezed into the complete area just below where the lid has to go has cured that spurious oscillation.

And following Luis' comment about poor performance of '1303 devices at 24 GHz, I am tempted to try replacing the '1303 output device with another '42484 - perhaps there will be more overall gain available - perhaps the tendency to oscillate will be worse as well - what do you think?

Further on the subject of '1303 devices, I am now thinking that the eBay seller in Canada from whom I obtained my ten devices may be selling ones that have previously had all the 'good' Idss individuals removed, leaving the mediocre ones which are now for sale.....caveat emptor!

So that's where the project is up to at the moment - I thought you would like to be updated.

Best 73,

--Doug Friend, VK4OE.

390. Re: [24GHzHam] 3-Stage HEMPT Amplifier - DB6NT Design

Yahoo group: 24GHzHam
Date: 2013-02-13 09:41:54 UTC
From: Jens Tunare
Topic: 385 Message: 390

Hi Doug and others,

I have built some Mini-PA for 23,5 GHz based on
DB6NTs 3-Stage HEMPT Amplifier PCB. I used the version with SMA
input/output.

The Mini-PA is used for driving a 23,5-47 GHz doubler. I reached almost
100 mW output at saturation driven from 3-5 mW.

In the final design I used 2 NE350184C and a Filtronics LP6836P70 in the
final stage.
Initially I had problem with oscillation in the first stage. Re-soldering
the
source grounding solved this problem.

In order to reach the final results I spent many hours snowflaking.
I also raised the voltage for the final stage to 7-8 V

I have also built one Mini-PA based on DB6NTs PCB#20 with 2 LP6836P70
in the final stage and also a LP6836P70 as driver.
Reached 200 mW sat. output after even longer time of snowflaking.

--
/Jens, SM6AFV

391. Re: [24GHzHam] 3-Stage HEMPT Amplifier - DB6NT Design

Yahoo group: 24GHzHam
Date: 2013-02-13 11:59:44 UTC
From: DougF
Topic: 385 Message: 391

Thanks Jens for your information and for describing your experiences with different devices.

One thing that I found late this afternoon was the great improvement arising from simply raising the DC supply voltage from the specified +5V to +6V. From what you say, perhaps it's safe to go even higher!

I have not ever seen those fancy Filtronic devices available - perhaps you have different things available where you are located. Are your devices still available for purchase somewhere? I am presently looking at Franco Rota's catalogue list for devices that go beyond 20 GHz. I expect that more than one of these different devices will suit the DB6NT PCB which you and I are using.

Cheers and 73,

--Doug Friend, VK4OE.

On 13/02/2013 7:41 PM, Jens Tunare wrote:
> Hi Doug and others,
> I have built some Mini-PA for 23,5 GHz based on
> DB6NTs 3-Stage HEMPT Amplifier PCB. I used the version with SMA
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> The Mini-PA is used for driving a 23,5-47 GHz doubler. I reached almost
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> /Jens, SM6AFV

392. Re: [24GHzHam] 3-Stage HEMPT Amplifier - DB6NT Design

Yahoo group: 24GHzHam
Date: 2013-02-13 14:59:38 UTC
From: Zack Widup
Topic: 385 Message: 392

I've gotten the idea from several people (Luis may have been one of them) that the MGF1302/1303 makes a great doubler from 12 to 24 GHz, generating plenty of second harmonic, but isn't that great a device as a straight amp at 24 GHz.

I have quite a few NE32584's in my junquebox and they do fine at 24 GHz.

Mouser Electronics sells CEL parts and I will usually look through what they currently have when I place an order with them, find one that has s-parameters through 24 GHz showing some gain, and order a few. I have some of the NE350184C devices, which are spec'd through 26 GHz and show about 12 dB of gain and better than 1 dB noise figure at 24 GHz. I haven't used any of them, yet. Unfortunately these devices don't seem to stay around very long; both the 32584 and the 350184 are considered obsolete and are probably going to become harder and harder to find. Mouser doesn't carry them anymore.

73, Zack W9SZ

On 2/13/13, Jens Tunare <jens.tunare@...> wrote:
> Hi Doug and others,
>
> I have built some Mini-PA for 23,5 GHz based on
> DB6NTs 3-Stage HEMPT Amplifier PCB. I used the version with SMA
> input/output.
>
> The Mini-PA is used for driving a 23,5-47 GHz doubler. I reached almost
> 100 mW output at saturation driven from 3-5 mW.
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> final stage.
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> source grounding solved this problem.
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> I have also built one Mini-PA based on DB6NTs PCB#20 with 2 LP6836P70
> in the final stage and also a LP6836P70 as driver.
> Reached 200 mW sat. output after even longer time of snowflaking.
>
>
> --
> /Jens, SM6AFV
>

393. Re: [24GHzHam] 3-Stage HEMPT Amplifier - DB6NT Design

Yahoo group: 24GHzHam
Date: 2013-02-13 23:26:52 UTC
From: DougF
Topic: 385 Message: 393

Hello Zack and other readers.

Yes, I also noted with interest Luis' comment about the preferred use of a '1303 as a doubler rather than an amplifier at 24 GHz. I suppose that it has to do with the fundamental quantum mechanics of the particular doped semiconductor materials that are in the device.

A few points/questions arise in my mind:

Is the '1303 inherently better than the '1302 in this regard, perhaps because of its higher dissipation rating or gate size, or both?

Are 'higher' or 'lower' Idss values preferred for doubler service? Intuitively, I expect that devices with lower Idss values would double better, but I may well have that wrongly understood.

Are we talking here about a 'standard' self-biased FET doubler circuit configuration and comparing device performances in similar situations?

I am now thinking that the '1303 devices I have purchased in recent times on the surplus market are not suitable for amplifier service at 24 GHz - they may work as doublers there (but I don't need so many of them!) - and that I should find/develop a project to use them as amplifiers at 5.7 or 10.3 GHz!

And, as Jens pointed out, there are plenty of newer devices out there that will work better as power amplifiers at 24 GHz than the '1303 ever did! RF Elettronica has some 'beauties' listed, and I have this morning purchased some EPA025A-70 devices from another source.

Best 73,

--Doug Friend, VK4OE.

On 14/02/2013 12:59 AM, Zack Widup wrote:
>
> I've gotten the idea from several people (Luis may have been one of
> them) that the MGF1302/1303 makes a great doubler from 12 to 24 GHz,
> generating plenty of second harmonic, but isn't that great a device as
> a straight amp at 24 GHz.
>
> I have quite a few NE32584's in my junquebox and they do fine at 24 GHz.
>
> Mouser Electronics sells CEL parts and I will usually look through
> what they currently have when I place an order with them, find one
> that has s-parameters through 24 GHz showing some gain, and order a
> few. I have some of the NE350184C devices, which are spec'd through 26

> GHz and show about 12 dB of gain and better than 1 dB noise figure at
> 24 GHz. I haven't used any of them, yet. Unfortunately these devices
> don't seem to stay around very long; both the 32584 and the 350184 are
> considered obsolete and are probably going to become harder and harder
> to find. Mouser doesn't carry them anymore.
>
> 73, Zack W9SZ
>

394. Transmit Keying

Yahoo group: 24GHzHam
Date: 2013-04-13 03:13:58 UTC
From: kd7ts
Topic: 394 Message: 394

I am just getting a sequencer integrated with the Endwave SDH unit. According to what I have been able to glean from prior postings, if using the NDT456, the transmit is enabled by grounding the gate and left to "float" for receive.

The NDT456 gate is pulled to the drain through a 5 K resistor, so the gate is not really floating. My sequencer switches a 2N7002 either on or off. When on, the drain is pulled to ground, other wise the drain voltage is not especially defined as anything in particular. The voltage on the drain is about 3.3 volts if nothing is connected to it. With a relay connected it measures 12.3 (whatever). I think if the NDT456 gate is connected it will be whatever voltage comes from the 5 K resistor.

In Message 145 Pyro Joe mentions a 2 volt threshold ? At any rate I am concerned that there might be a condition where the NDT456 is not fully turned off. Should I worry ? This seems like it should work just fine.

Another question .. I see the same NDT456 used in the receive circuit. Does anyone have any comments on this ? It seems pretty easy, and might cut down on heat.

Mike KD7TS

395. Re: [24GHzHam] Transmit Keying

Yahoo group: 24GHzHam
Date: 2013-04-13 14:27:14 UTC
From: Joseph Ruggieri
Topic: 394 Message: 395

Hi Mike,

Your understanding of the NDT456 circuit is not correct.

The output from the 5v regulator is connected to the NDT456 source, not the drain.
The output of the NDT456 goes to the SDH transmit devices.
The 5k resistor is from the source to the gate, not drain to gate.
The NDT456 is a P- channel device.
The 2 volt threshold that I reference is from the gate to the source which is at 5v.
There is no reason to switch the receive circuits since the only things unique to the receive are the IR mixer and LNA
which only draw a few MA. The remaining quiescent current is from the LO freq. doubler and amp which are
used in both rx and tx and require a lot of current.

Joe KI4NPV

----- Original Message -----
From: "kd7ts" <kd7ts@...>
To: <24GHzHam@yahoogroups.com>
Cc: <kd7ts@...>
Sent: Friday, April 12, 2013 11:13 PM
Subject: [24GHzHam] Transmit Keying

>
> I am just getting a sequencer integrated with the Endwave SDH unit.
> According to what I have been able to glean from prior postings, if using
> the NDT456, the transmit is enabled by grounding the gate and left to
> "float" for receive.
>
> The NDT456 gate is pulled to the drain through a 5 K resistor, so the gate
> is not really floating. My sequencer switches a 2N7002 either on or off.
> When on, the drain is pulled to ground, other wise the drain voltage is
> not especially defined as anything in particular. The voltage on the drain
> is about 3.3 volts if nothing is connected to it. With a relay connected
> it measures 12.3 (whatever). I think if the NDT456 gate is connected it
> will be whatever voltage comes from the 5 K resistor.
>
> In Message 145 Pyro Joe mentions a 2 volt threshold ? At any rate I am
> concerned that there might be a condition where the NDT456 is not fully
> turned off. Should I worry ? This seems like it should work just fine.
>
> Another question .. I see the same NDT456 used in the receive circuit.
> Does anyone have any comments on this ? It seems pretty easy, and might

> cut down on heat.
>
> Mike KD7TS
>
>
> ---
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> Yahoo! Groups Links
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396. Re: [24GHzHam] Transmit Keying

Yahoo group: 24GHzHam
Date: 2013-04-13 14:47:18 UTC
From: kd7ts
Topic: 394 Message: 396

On Sat, 13 Apr 2013 07:27:14 -0700, Joseph Ruggieri
<jruggieri3@...> wrote:

> Your understanding of the NDT456 circuit is not correct.

Hi Joe,

Thanks for the info. I will revisit this. I used the picture as a guide to mounting the NDT456, then did not get back to this for a year or so. I have yet to power anything on the endwave board. I am extremely paranoid about ruining this board.

73 Mike KD7TS

397. Re: [24GHzHam] Transmit Keying

Yahoo group: 24GHzHam
Date: 2013-04-13 16:46:39 UTC
From: Zack Widup
Topic: 394 Message: 397

I did all the mods that Joe recommended, including changing the resistor values that correct excessive current draw in a transmit driver. It works great.

I use a relay to switch the transmit line, though. The relay just grounds the gate of the NDT456 (I think - I don't have the unit here in front of me).

73, Zack W9SZ

On 4/13/13, kd7ts <kd7ts@...> wrote:
> On Sat, 13 Apr 2013 07:27:14 -0700, Joseph Ruggieri
> <jruggieri3@...> wrote:
>
>> Your understanding of the NDT456 circuit is not correct.
>
> Hi Joe,
>
> Thanks for the info. I will revisit this. I used the picture as a guide to
>
> mounting the NDT456, then did not get back to this for a year or so. I
> have yet to power anything on the endwave board. I am extremely paranoid
> about ruining this board.
>
> 73 Mike KD7TS
>
>
> ----------
>
> Yahoo! Groups Links
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>

398. CT1DMK circuits

Yahoo group: 24GHzHam
Date: 2013-04-23 16:54:55 UTC
From: Zack W
Topic: 398 Message: 398

I have an Endwave SDH unit but I have also been working on building the circuits by CT1DMK that are on his website:

http://www.qsl.net/ct1dmk/mw_hi.html

I'm curious if anyone but CT1DMK has built these? I made the boards myself and assembled them. Now I need to put it all together and snowflake tune them.

I also have the circuit boards for the G8ACE amps that will (hopefully) produce up to 500 mW at 24 GHz:

http://www.microwaves.dsl.pipex.com/24ghz/24gpa.htm

Hopefully all this will work when I get it put together.

73, Zack W9SZ

399. New file uploaded to 24GHzHam

Yahoo group: 24GHzHam
Date: 2013-04-24 13:28:21 UTC
From: 24GHzHam@yahoogroups.com
Topic: 31 Message: 399

```
Hello,

This email message is a notification to let you know that
a file has been uploaded to the Files area of the 24GHzHam
group.

File : /F5BQP/Dual.zip
Uploaded by : f5bqp_pfm <pfmonet@...>
Description : Dual TGA4915 24Ghz amp ~15W

You can access this file at the URL:
http://groups.yahoo.com/group/24GHzHam/files/F5BQP/Dual.zip

To learn more about file sharing for your group, please visit:
http://help.yahoo.com/l/us/yahoo/groups/original/members/web/index.html
Regards,

f5bqp_pfm <pfmonet@...>
```

400. New file uploaded to 24GHzHam

Yahoo group: 24GHzHam
Date: 2013-04-24 13:34:58 UTC
From: 24GHzHam@yahoogroups.com
Topic: 31 Message: 400

Hello,

This email message is a notification to let you know that
a file has been uploaded to the Files area of the 24GHzHam
group.

File : /F5BQP/Une petite quinzaine de Watt sur 24Ghz.doc
Uploaded by : f5bqp_pfm <pfmonet@...>
Description : Dual TGA4915 amp (sorry it's in French).

You can access this file at the URL:
http://groups.yahoo.com/group/24GHzHam/files/F5BQP/Une%20petite%20quinzaine%20de%20Watt%20sur%2024Ghz.doc

To learn more about file sharing for your group, please visit:
http://help.yahoo.com/l/us/yahoo/groups/original/members/web/index.html
Regards,

f5bqp_pfm <pfmonet@...>

401. Re: [24GHzHam] CT1DMK circuits

Yahoo group: 24GHzHam
Date: 2013-05-16 10:05:25 UTC
From: ct1dmk
Topic: 398 Message: 401

Hi Zack,

> I'm curious if anyone but CT1DMK has built these? I made the boards
> myself and assembled them. Now I need to put it all together and
> snowflake tune them.

All I can say is that at the time I had PCBs I've sent pcbs to about 4
different
hams also sent 4 sets of 1:1 films to other 4 hams to make pcbs...
But not sure how it all ended, I would say that at least some have been
made.

Mine work great ;-) and experimenting recent devices is all possible
with those
since no tuning exists on the pcb's so....

Luis Cupido.
ct1dmk

On 4/23/2013 5:54 PM, Zack W wrote:
> I have an Endwave SDH unit but I have also been working on building the
> circuits by CT1DMK that are on his website:
>
> http://www.qsl.net/ct1dmk/mw_hi.html
>
> I'm curious if anyone but CT1DMK has built these? I made the boards
> myself and assembled them. Now I need to put it all together and
> snowflake tune them.
>
> I also have the circuit boards for the G8ACE amps that will (hopefully)
> produce up to 500 mW at 24 GHz:
>
> http://www.microwaves.dsl.pipex.com/24ghz/24gpa.htm
>
> Hopefully all this will work when I get it put together.
>
> 73, Zack W9SZ
>
>
>

402. Re: [24GHzHam] CT1DMK circuits

Yahoo group: 24GHzHam
Date: 2013-05-16 14:21:41 UTC
From: Zack Widup
Topic: 398 Message: 402

Hi Luis,

Great! Maybe some are on this group and can say something about their attempts with the circuits.

Have you found any newer devices in particular that you like? I know MGF1302's are becoming difficult to find, at least cheap ones. I have some NE350184C FET's that I want to try at 24 GHz.

73, Zack W9SZ

On 5/16/13, ct1dmk <ct1dmk@...> wrote:
> Hi Zack,
>
> > I'm curious if anyone but CT1DMK has built these? I made the boards
> > myself and assembled them. Now I need to put it all together and
> > snowflake tune them.
>
> All I can say is that at the time I had PCBs I've sent pcbs to about 4
> different
> hams also sent 4 sets of 1:1 films to other 4 hams to make pcbs...
> But not sure how it all ended, I would say that at least some have been
> made.
>
> Mine work great ;-) and experimenting recent devices is all possible
> with those
> since no tuning exists on the pcb's so....
>
> Luis Cupido.
> ct1dmk
>
>
> On 4/23/2013 5:54 PM, Zack W wrote:
>> I have an Endwave SDH unit but I have also been working on building the
>> circuits by CT1DMK that are on his website:
>>
>> http://www.qsl.net/ct1dmk/mw_hi.html
>>
>> I'm curious if anyone but CT1DMK has built these? I made the boards
>> myself and assembled them. Now I need to put it all together and
>> snowflake tune them.
>>
>> I also have the circuit boards for the G8ACE amps that will (hopefully)
>> produce up to 500 mW at 24 GHz:
>>
>> http://www.microwaves.dsl.pipex.com/24ghz/24gpa.htm

>>
>> Hopefully all this will work when I get it put together.
>>
>> 73, Zack W9SZ
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> Yahoo! Groups Links
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403. Re: [24GHzHam] CT1DMK circuits

Yahoo group: 24GHzHam
Date: 2013-05-16 15:06:52 UTC
From: ct1dmk
Topic: 398 Message: 403

Zack,

For doublers the new GaAs fets (like actual nec or mitsubishi etc)
work fine, require less drive, but 2nd harm. out saturate lower than the
MGF1203's
Not sure if as doublers I should call them more efficient or less efficient.
Depends if you really need those extra few dB's (to drive a mixer for
example).

For rx amps.... well.... the mgf4957 beats all of them...
also the low cost NE321s00 is great but you must sunk it on PCB
and flatten their legs etc...

So we are only in trouble for the 3 dB extra we could get from the 1302
as doubler... all the rest the modern fets are better. more gain less
noise etc.

lc
ct1dmk.

On 5/16/2013 3:21 PM, Zack Widup wrote:
> Hi Luis,
>
> Great! Maybe some are on this group and can say something about their
> attempts with the circuits.
>
> Have you found any newer devices in particular that you like? I know
> MGF1302's are becoming difficult to find, at least cheap ones. I have
> some NE350184C FET's that I want to try at 24 GHz.
>
> 73, Zack W9SZ
>
> On 5/16/13, ct1dmk <ct1dmk@... <mailto:ct1dmk%40gmail.com>> wrote:
> > Hi Zack,
> >
> > > I'm curious if anyone but CT1DMK has built these? I made the boards
> > > myself and assembled them. Now I need to put it all together and
> > > snowflake tune them.
> >
> > All I can say is that at the time I had PCBs I've sent pcbs to about 4
> > different
> > hams also sent 4 sets of 1:1 films to other 4 hams to make pcbs...
> > But not sure how it all ended, I would say that at least some have been
> > made.
> >
> > Mine work great ;-) and experimenting recent devices is all possible

> > with those
> > since no tuning exists on the pcb's so....
> >
> > Luis Cupido.
> > ct1dmk
> >
> >
> > On 4/23/2013 5:54 PM, Zack W wrote:
> >> I have an Endwave SDH unit but I have also been working on building the
> >> circuits by CT1DMK that are on his website:
> >>
> >> http://www.qsl.net/ct1dmk/mw_hi.html
> >>
> >> I'm curious if anyone but CT1DMK has built these? I made the boards
> >> myself and assembled them. Now I need to put it all together and
> >> snowflake tune them.
> >>
> >> I also have the circuit boards for the G8ACE amps that will (hopefully)
> >> produce up to 500 mW at 24 GHz:
> >>
> >> http://www.microwaves.dsl.pipex.com/24ghz/24gpa.htm
> >>
> >> Hopefully all this will work when I get it put together.
> >>
> >> 73, Zack W9SZ
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404. Re: [24GHzHam] CT1DMK circuits

Yahoo group: 24GHzHam
Date: 2013-05-16 15:52:31 UTC
From: Zack Widup
Topic: 398 Message: 404

I've seen that part number MGF4957 somewhere before. Any idea where I could get those?

73, Zack W9SZ

On 5/16/13, ct1dmk <ct1dmk@...> wrote:
> Zack,
>
> For doublers the new GaAs fets (like actual nec or mitsubishi etc)
> work fine, require less drive, but 2nd harm. out saturate lower than the
> MGF1203's
> Not sure if as doublers I should call them more efficient or less
> efficient.
> Depends if you really need those extra few dB's (to drive a mixer for
> example).
>
> For rx amps.... well.... the mgf4957 beats all of them...
> also the low cost NE321s00 is great but you must sunk it on PCB
> and flatten their legs etc...
>
> So we are only in trouble for the 3 dB extra we could get from the 1302
> as doubler... all the rest the modern fets are better. more gain less
> noise etc.
>
> lc
> ct1dmk.
>
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>
> On 5/16/2013 3:21 PM, Zack Widup wrote:
>> Hi Luis,
>>
>> Great! Maybe some are on this group and can say something about their
>> attempts with the circuits.
>>
>> Have you found any newer devices in particular that you like? I know
>> MGF1302's are becoming difficult to find, at least cheap ones. I have
>> some NE350184C FET's that I want to try at 24 GHz.
>>
>> 73, Zack W9SZ
>>
>> On 5/16/13, ct1dmk <ct1dmk@... <mailto:ct1dmk%40gmail.com>> wrote:
>> > Hi Zack,
>> >

>> > > I'm curious if anyone but CT1DMK has built these? I made the boards
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>> > > snowflake tune them.
>> >
>> > All I can say is that at the time I had PCBs I've sent pcbs to about 4
>> > different
>> > hams also sent 4 sets of 1:1 films to other 4 hams to make pcbs...
>> > But not sure how it all ended, I would say that at least some have
>> been
>> > made.
>> >
>> > Mine work great ;-) and experimenting recent devices is all possible
>> > with those
>> > since no tuning exists on the pcb's so....
>> >
>> > Luis Cupido.
>> > ct1dmk
>> >
>> >
>> > On 4/23/2013 5:54 PM, Zack W wrote:
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>> >>
>> >> http://www.qsl.net/ct1dmk/mw_hi.html
>> >>
>> >> I'm curious if anyone but CT1DMK has built these? I made the boards
>> >> myself and assembled them. Now I need to put it all together and
>> >> snowflake tune them.
>> >>
>> >> I also have the circuit boards for the G8ACE amps that will
>> (hopefully)
>> >> produce up to 500 mW at 24 GHz:
>> >>
>> >> http://www.microwaves.dsl.pipex.com/24ghz/24gpa.htm
>> >>
>> >> Hopefully all this will work when I get it put together.
>> >>
>> >> 73, Zack W9SZ
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405. Really simple 24GHz transverter by 9A4QV

Yahoo group: 24GHzHam
Date: 2013-06-10 11:31:54 UTC
From: adam
Topic: 405 Message: 405

Short funny video:

https://www.youtube.com/watch?v=R-P5by_1G8E

Adam

406. 24 GHz QSO

Yahoo group: 24GHzHam
Date: 2013-09-04 21:01:27 UTC
From: Zack W
Topic: 406 Message: 406

I just thought that I'd mention that I worked Garry K3SIW on August 17, 2013, the first day of the ARRL 10+ GHz contest, on 24 GHz. Path was from EN50rl > EN52sa, about 106 miles. This was the farthest either of us have worked on 24 GHz. I was using an Endwave SDH unit and a commercial 1-foot diameter dish and Garry was using either a DB6NT unit or a homebrew station and a 2-foot dish. It wasn't too long after sunrise and we had been experiencing some enhancement on 10 GHz around and after sunrise.

I've made a few other QSO's with my unit in the 20-30 mile range, but it was great to know I could manage longer distances. I did try for two other QSO's on 24 GHz later that day but neither was successful. I think the enhancement had disappeared by then.

I will be taking it along with me in the September 10+ GHz contest weekend to try to make some QSO's across Lake Michigan from the Wisconsin side.

73, Zack W9SZ

407. Re: [24GHzHam] 24 GHz QSO

Yahoo group: 24GHzHam
Date: 2013-09-10 19:10:24 UTC
From: Graham Stratford
Topic: 406 Message: 407

Zack,

Congratulations on working 106 miles on 24 GHz. The best I have been able to do so far is 114 km SSB. My equipment is a Thales transverter with an Elcom DFS1201 LO working at 11880 MHz and a 432 MHz IF. I use an 18" offset dish. I tried working across Lake Erie in August but the conditions were not very good. VE3ZV and KB8VAO worked but they have DB6NT rigs. Signals were weak on CW. I'm hoping to have 24 GHz contacts in the September outing and finally work across either Lake Ontario or Lake Erie.

Keep trying and 73,

Graham Stratford VE3FHM

From: Zack W <w9sz.zack@...>
To: 24GHzHam@yahoogroups.com
Sent: Wednesday, September 4, 2013 5:01:27 PM
Subject: [24GHzHam] 24 GHz QSO

I just thought that I'd mention that I worked Garry K3SIW on August 17, 2013, the first day of the ARRL 10+ GHz contest, on 24 GHz. Path was from EN50rl > EN52sa, about 106 miles. This was the farthest either of us have worked on 24 GHz. I was using an Endwave SDH unit and a commercial 1-foot diameter dish and Garry was using either a DB6NT unit or a homebrew station and a 2-foot dish. It wasn't too long after sunrise and we had been experiencing some enhancement on 10 GHz around and after sunrise.

I've made a few other QSO's with my unit in the 20-30 mile range, but it was great to know I could manage longer distances. I did try for two other QSO's on 24 GHz later that day but neither was successful. I think the enhancement had disappeared by then.

I will be taking it along with me in the September 10+ GHz contest weekend to try to make some QSO's across Lake Michigan from the Wisconsin side.

73, Zack W9SZ

408. WW2R - DFS1201 math

Yahoo group: 24GHzHam
Date: 2013-12-06 10:00:21 UTC
From: <adam9a4qv@...>
Topic: 408 Message: 408

Hello,
I review the Dave math and found some odd things, is it typo or I am geting something wrong? I have a couple of dfs-1201 to program and do not want to spoil the things.
By the way if somebody have some extra CDFS-1295 to sell please let me know.

So here are the odds??

As 8 words this is 11880000. Converting this to binary we get 0001 0001 0100 0100 0000 0000 0000 0000. Remembering the order of the bits, this has to be sent as 0000 0000 0000 0000 0010 0010 1000 which in hex is 0000228.

Multiplying by 11880000 by 3 we get 35640000. Converting this to binary we get 0011 0101 0011 0100 0000 0000 0000 0000. Remembering the order of the bits this has to be sent as 0000 0000 0000 0000 0010 1100 1010 1100 which in hex is 00002CAC

The conversion from decimal to binary in both case, is it OK??

Thanks
Adam

409. Re: [24GHzHam] WW2R - DFS1201 math

Yahoo group: 24GHzHam
Date: 2013-12-06 20:30:46 UTC
From: Graham Stratford
Topic: 408 Message: 409
Attachments: 1 described; binary payloads are missing from this source WARC

Adam,

I have attached the file that you need.

73,

Graham VE3FHM

On Friday, December 6, 2013 5:00:21 AM, "adam9a4qv@..." <adam9a4qv@yahoo.com> wrote:

Hello,
I review the Dave math and found some odd things, is it typo or I am geting something wrong? I have a couple of dfs-1201 to program and do not want to spoil the things.
By the way if somebody have some extra CDFS-1295 to sell please let me know.

So here are the odds??

As 8 words this is 11880000. Converting this to binary we get
0001 0001 0100 0100 0000 0000 0000 0000. Remembering the order of the bits,
this has to be sent as 0000 0000 0000 0000 0010 0010 1000 which in hex is
0000228.

Multiplying by 11880000 by 3 we get 35640000. Converting this
to binary we get 0011 0101 0011 0100 0000 0000 0000 0000. Remembering the order
of the bits this has to be sent as 0000 0000 0000 0000 0010 1100 1010 1100
which in hex is 00002CAC

The conversion from decimal to binary in both case, is it OK??

Thanks
Adam

410. Re: [24GHzHam] WW2R - DFS1201 math

Yahoo group: 24GHzHam
Date: 2013-12-06 21:47:15 UTC
From: <adam9a4qv@...>
Topic: 408 Message: 410

Hello Graham

thanks for the mail.
I can not download the file from the mail in the windows, will try it under linux..
It is all clear, and I can directly modify the HEX filie without messing with the asembler.
Just multiply the frequency by 3 and modify the hex as per :

http://ok1vvm.aitech.cz/projekty/DFS1201.htm

I believe that Dave make some copy/paste oversight or typo and thats it..
i was not sure if there is something else included in the calculation, so better to ask...

I do have already dfs-1201 running on my 24Ghz transverter and another dfs-1295 running on other but I forget how and what I programmed in...

Thanks to all for help

Adam

411. Re: [24GHzHam] WW2R - DFS1201 math

Yahoo group: 24GHzHam
Date: 2013-12-06 22:04:04 UTC
From: Herbert Ullmann
Topic: 408 Message: 411

You don't need any conversions from binary to hex and vice versa .. the only place in Dave's code that needs to be modified for your selection of frequency is this:

```
;values for freq 1 24192 432 IF (11880MHz) ...remember to multiply frequency by 3

        movlw    0x35
        movwf    f1_1

        movlw    0x64
        movwf    f1_2

        movlw    0x00
        movwf    f1_3

        movlw    0x00
        movwf    f1_4
```

Note this remark in his article:

Example 11.880GHz

Multiplying by 11880000 by 3 we get 35640000.

http://g4fre.com/dfs1201.htm

I am running ELCOM in my 24GHz station too.

73 Herbert
AF4JF

From: "adam9a4qv@yahoo.com" <adam9a4qv@...>
To: 24GHzHam@yahoogroups.com
Sent: Friday, December 6, 2013 3:47 PM
Subject: Re: [24GHzHam] WW2R - DFS1201 math

Hello Graham

thanks for the mail.
I can not download the file from the mail in the windows, will try it under linux..
It is all clear, and I can directly modify the HEX filie without messing with the asembler.
Just multiply the frequency by 3 and modify the hex as per :

http://ok1vvm.aitech.cz/projekty/DFS1201.htm

I believe that Dave make some copy/paste oversight or typo and thats it..
i was not sure if there is something else included in the calculation, so better to ask...

I do have already dfs-1201 running on my 24Ghz transverter and another dfs-1295 running on other but I forget how and what I programmed in...

Thanks to all for help

Adam

412. Re: [24GHzHam] WW2R - DFS1201 math

Yahoo group: 24GHzHam
Date: 2013-12-07 01:49:21 UTC
From: <adam9a4qv@...>
Topic: 408 Message: 412

Thanks Herbert,

off course, your way is easier and faster.
I make both way, editing the .asm file and compile to hex and manual editing hex plus calculating the checksum manually.

Both way I have the same result.
Al should be ok now.

Thanks again
Adam

413. mmTech PA Repair

Yahoo group: 24GHzHam
Date: 2014-07-08 12:45:14 UTC
From: g4eat@...
Topic: 413 Message: 413

10 years ago I acquired a 2 to 3 W mmTech PA.
Glad to say that it gave me 8 years of maintenence free service mounted outside at the top of my tower through successive UK winters and summers.

During this years summer contests I noticed the bench PSU tripped on Tx at >2A.
The PA DC bias board seems to be the problem (hopefully if its a single point failure and the RF devices are still good).

Incoming +12V is subregulated to +5V and then inverted to -5V. There are 5 pots with tantalum capacitors to bias the RF devices. Kjeld OZ1FF had one of his tantalums fail and recommends replacing all 5.
The generation of the negative volts enables the inhibit function on a 12V switching regulator Texas Instruments PT6304A (fitted as a sub-PCB on the main bias board). This has a voltage adjustment resistor fitted to set the output to +7V. With the output pins disconnected the bias board still draws >2A so I suspect the switching regulator has failed.

Farnell UK say the PT6304A is discontinued.
Anyone know of a source?
Better still anyone have a complete bias board or RF amp thay can spare?

TIA

John G4EAT

414. Re: [24GHzHam] mmTech PA Repair

Yahoo group: 24GHzHam
Date: 2014-07-08 13:43:01 UTC
From: Barry Malowanchuk
Topic: 413 Message: 414

GM

You need to contact Paul W2PED

Best 73
Barry VE4MA

----- Original Message -----

From: "g4eat@... [24GHzHam]" <24GHzHam@yahoogroups.com>
To: 24GHzHam@yahoogroups.com
Sent: Tuesday, July 8, 2014 7:45:14 AM
Subject: [24GHzHam] mmTech PA Repair

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Anyone know of a source?
Better still anyone have a complete bias board or RF amp thay can spare?

TIA

John G4EAT

415. Re: [24GHzHam] mmTech PA Repair

Yahoo group: 24GHzHam
Date: 2014-07-08 14:05:22 UTC
From: Bob
Topic: 413 Message: 415

You may want to look at this link where TI suggests a replacement.
http://www.ti.com/product/pt6304

73
Bob WA6VHS

On 7/8/2014 6:43 AM, Barry Malowanchuk ve4ma@... [24GHzHam] wrote:
>
> GM
>
> You need to contact Paul W2PED
>
> Best 73
>
> Barry VE4MA
>
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> TIA
>
> John G4EAT
>
>
>

416. Re: [24GHzHam] mmTech PA Repair

Yahoo group: 24GHzHam
Date: 2014-07-08 14:08:15 UTC
From: ct1dmk
Topic: 413 Message: 416

John,

You have it in Germany:
http://www.ebay.com/itm/Texas-Instruments-PT6304C-Spannungsregler-neu-inkl-MwSt-/301216954276

There are on ebay a few other very popular cheap pcb.assy same function
as the PT6304 (even similar size) for 3A Vout adjustable(multiturn trim)
from 3.0V upwards
some have the standby/on control on pads already (or you can add the
standby control
wire directly to the IC pin). Uses the industry standard LM2596S.

http://www.ebay.com/itm/5pcs-DC-DC-3A-Buck-Converter-Adjustable-Step-Down-Power-Supply-Module-LM2596S-/201084486537

73
Luis Cupido
ct1dmk.

On 7/8/2014 1:45 PM, g4eat@... [24GHzHam] wrote:
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> TIA
>
> John G4EAT
>
>

417. Endwave units again

Yahoo group: 24GHzHam
Date: 2014-11-30 10:47:12 UTC
From: brian.flynn@...
Topic: 417 Message: 417

There has been a revival in interest in 24G here in GM and there have been some tests going on over some interesting paths. I originally got two of the units from Kes back in 2006. One is in a transverter and is working fine. The other one has a fault on the Rx side. It transmits OK. I suspect the bias loop on the Rx mixer MMIC, but I am unsure which of the quad opamps (LM2902) on the PCB to investigate. Has anyone in this group traced out the circuitry or better still have a circuit diagram? I have opened the compartment that houses the MMICs (with some intrepidation) and microstrip circuitry and all the wire bonds are intact.

Brian Flynn

GM8BJF

418. Hi there microwavers !

Yahoo group: 24GHzHam
Date: 2014-12-23 12:22:48 UTC
From: ct4an.radio@...
Topic: 418 Message: 418

Hi,
Where are you, microwavers ?
MERRY CHRISTMAS !
73 de
Joe
CT4AN

419. Re: Hi there microwavers !

Yahoo group: 24GHzHam
Date: 2014-12-23 12:46:21 UTC
From: pfmonet@...
Topic: 418 Message: 419

Hi Joe & the Gang,

Here we're!

Merry Christmas also, and many fancy toys to play with ... :-)

73's
Pierre-Francois, F5BQP

420. Re: [24GHzHam] Hi there microwavers !

Yahoo group: 24GHzHam
Date: 2014-12-23 15:00:40 UTC
From: Zack Widup
Topic: 418 Message: 420

Merry Christmas (or should I say ARL SIXTY ONE)?
:-)

I'm having a problem with my Endwave SDH system but I think it is with my
LO chain. It's another winter project, to troubleshoot and repair it.

73, Zack W9SZ

On Tue, Dec 23, 2014 at 6:22 AM, ct4an.radio@... [24GHzHam] <
24GHzHam@yahoogroups.com> wrote:

>
>
> Hi,
>
> Where are you, microwavers ?
>
> MERRY CHRISTMAS !
>
> 73 de
>
> Joe
>
> CT4AN
>
>
>

421. Re: Hi there microwavers !

Yahoo group: 24GHzHam
Date: 2014-12-24 05:50:10 UTC
From: Dave Nelson
Topic: 418 Message: 421

Hi there Joe
Merry Christmas to you too and best wishes for 2015 to you and your family

for me I have been VERY quiet on amateur radio over the last 2 yrs since my
major heart surgery. I no longer have the strength to lift dishes in and
out of the car
for doing the hilltopping I used to love doing on 144MHz to 24GHz
If health improves maybe I will be able to get active again one day :)

regards and blessings
Dave
VK2TDN

At 11:36 PM 23/12/2014, you wrote:
>1. Hi there microwavers !
> Posted by: ct4an.radio@... ct4an.radio
> Date: Tue Dec 23, 2014 4:22 am ((PST))
>
>Hi,
> Where are you, microwavers ?
> MERRY CHRISTMAS !
> 73 de
> Joe
> CT4AN

422. Endwave SDH unit problem?

Yahoo group: 24GHzHam
Date: 2015-02-08 22:46:10 UTC
From: Zack Widup
Topic: 422 Message: 422

I have had one of these units for several years. I built a transverter system around it. Here's the details: I built a W1GHZ Miniverter-F with a 432 MHz helical filter instead of the 144 MHz one he used. It has an external 404 MHz LO. This has always seemed to be working fine as a 432 to 28 MHz IF. It supplies about +5 dBm on 432 MHz to the Endwave unit on transmit. My LO for the Endwave unit starts with a 165 MHz phase-locked VCXO and multipies this to 1485 MHz on a separate board. Another board, a modified version of the W1GHz "Personal beacon for 10368 MHz," multiplies this to 11880 MHz. I get +12 dBm out of that circuit, so I use an attenuator to bring it to +8 dBm LO input to the SDH unit.

The Endwave unit has a waveguide a filter I got from Joe KI4NPV, which he had pretuned to 24192 MHz.

After I had assembled this whole thing. I had no way of testing it on receive, but my HP 435B power meter indicated it was putting out a watt. When I first tried using this transverter setup in the 10+ GHz contest far away from home several years ago, it didn't seem to be working. I was set up right next to another station who was working people across Lake Michigan from the Wisconsin side. I could not hear him on receive and he couldn't hear me on transmit. When I got home, I checked it out and everything seemed to be working.

Then, a couple years ago I was in the 10+ GHz contest in Wisconsin again, roving with with Pete K9PW. My system didn't seem to be working at our first stop, but later that day it did. I worked across the lake several times, with QSO's in the 70 to 80 mile range. Also, in some other contest (Fall Sprint?) I worked Garry K3SIW on 24 GHz over a 107 mile path.

Then last September I tried working K9PW and K3SIW on 24 GHz with it, unsuccessfully. Pete then drove to my QTH and I watched him work K3SIW on 24 GHz. I could not hear Pete's signal on 24 GHz with him right next to me, and he couldn't hear any signal from me. I had no way of measuring if it was putting out any power in the field.

I just got around to checking everything out. I still don't have a way of checking it out on receive. I did check out the LO and IF power levels. They were all as described above. Also, the unit was putting out 1 watt. I am assuming the 1 watt must be on the proper frequency because of the waveguide filter. Joe, if you're reading this, is this most likely true? What is the bandwidth of those filters after you've tuned them to 24192?

So I am wondering if there is some sort of intermittent problem with the Endwave unit itself, or if there is an intermittent peoblem with any of the associated circuitry I've built. I'm kind of stymied by this. In the field, all I can check out is the voltages to the SDH unit and otherwise, and they

all seem to be correct. I can also check the 432 transverter part of the system in the field, and it seems OK too. Then, when I get it home, everything I can check out seems OK. I also check out the hardware for any loose screws. There are none.

Is there any known intermittent problem with the Endwave SDH units?

73, Zack W9SZ

423. Re: [24GHzHam] Endwave SDH unit problem?

Yahoo group: 24GHzHam
Date: 2015-02-08 23:52:39 UTC
From: Joseph Ruggieri
Topic: 422 Message: 423

Hello Zack and others interested in this topic,

First of all I don't know of any intermittent problems with these transcievers.
For your question on the transmit filter, it is broad, about 200MHz which is plenty good to filter out the L.O.
The receive on these is done with image reject mixers so no LO or image filter required.
After reading your history, I would bet your problem is a drifting reference.
You stated the 165MHz was phase locked, but to what?
My requirement when I build transverters for 10GHz and up is to keep the LO frequency within 100Hz after warm-up.
(I have built 4 transverters using these transceivers, one on my tower and 3 that I loan out for contests.)
This will likely make you the most accurate in any contact which eliminates one variable.
I find that most contacts that I make the other end of the contact is 2-10KHz off frequency at 24GHGz.
If both party's in the contact are off or drifting the probability of making a contact and pointing directly at each other within 2 degrees is very unlikely.
Just too many variables not counting QSB and moisture absorption on this band.
I wish you were closer to me, EL98hr . I have a beacon at 24.192 using one of the SDH.
I maintain it within 100Hz of 24.192.

KI4NPV

----- Original Message -----
From: Zack Widup w9sz.zack@... [24GHzHam]
To: 24GHzHam@yahoogroups.com
Sent: Sunday, February 08, 2015 5:46 PM
Subject: [24GHzHam] Endwave SDH unit problem?

I have had one of these units for several years. I built a transverter system around it. Here's the details: I built a W1GHZ Miniverter-F with a 432 MHz helical filter instead of the 144 MHz one he used. It has an external 404 MHz LO. This has always seemed to be working fine as a 432 to 28 MHz IF. It supplies about +5 dBm on 432 MHz to the Endwave unit on transmit. My LO for the Endwave unit starts with a 165 MHz phase-locked VCXO and multipies this to 1485 MHz on a separate board. Another board, a modified version of the W1GHz "Personal beacon for 10368 MHz," multiplies this to 11880 MHz. I get +12 dBm out of that circuit, so I use an attenuator to bring it to +8 dBm LO input to the SDH unit.

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Is there any known intermittent problem with the Endwave SDH units?

73, Zack W9SZ

No virus found in this message.
Checked by AVG - www.avg.com
Version: 2015.0.5646 / Virus Database: 4281/9079 - Release Date: 02/08/15

424. Re: [24GHzHam] Endwave SDH unit problem?

Yahoo group: 24GHzHam
Date: 2015-02-09 01:19:42 UTC
From: Zack Widup
Topic: 422 Message: 424

Hi Joe,

Thanks. My reference LO is locked to is an Isotemp OCXO. I calibrate them every so often against a rubidium standard. Drift is less than 0.1 Hz at 10 MHz. With a 10 GHz LO phase-locked to it, it drifts less than 20 Hz and is usually within a couple hundred Hz accuracy. I don't think that is the problem. When it does work and I make some QSO's, it is within a kHz accuracy and less than 50 Hz drift.

I just wondered if somehow the LO came untuned and was passing a different harmonic of 1485 MHz. If the waveguide filter is only 200 MHz wide, I don't see that as the problem, either.

I guess I need to put together some sort of signal source for 24192 and also some sort of power meter I can use in the field to determine if it is putting out power.

73, Zack W9SZ

On 2/8/15, 'Joseph Ruggieri' jruggieri3@... [24GHzHam] <24GHzHam@yahoogroups.com> wrote:
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> KI4NPV
>
>
>
> ----- Original Message -----
> From: Zack Widup w9sz.zack@... [24GHzHam]
> To: 24GHzHam@yahoogroups.com
> Sent: Sunday, February 08, 2015 5:46 PM
> Subject: [24GHzHam] Endwave SDH unit problem?
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425. Re: [24GHzHam] Endwave SDH unit problem?

Yahoo group: 24GHzHam
Date: 2015-02-09 04:44:38 UTC
From: Joseph Ruggieri
Topic: 422 Message: 425

Hi Zack,

Your LO accuracy sounds very good.
Next I would suspect the LO going in and out of lock or failing in some other way.
One of the things I put on all my tower mounted transverters is a PTT push button switch in the shack that takes the transverter from RX to TX with no
RF applied.
I push the button and listen for the receiver background noise on the radio to drop in level.
If it goes from a loud noise to quiet when pushed I know the LO is there and locked and the TX relay and mixer are working.
If no change when I push the button I know the LO is gone, out of lock or I have a blown mixer.
The PB operates the relays in which ever band I have selected.
I go through all bands as a test prior to each contest.

Another possibility is that one of the filters after the frequency multipliers is too wide swapping back and forth on several harmonics.
This can also happen on the Macom bricks as well if the reference frequency is too low (10MHz instead of 100MHZ range reference) and the output will jump up or down from the correct frequency.

Joe

----- Original Message -----
From: Zack Widup w9sz.zack@gmail.com [24GHzHam]
To: 24GHzHam@yahoogroups.com
Sent: Sunday, February 08, 2015 8:19 PM
Subject: Re: [24GHzHam] Endwave SDH unit problem?

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> transmit. My LO for the Endwave unit starts with a 165 MHz phase-locked VCXO

> and multipies this to 1485 MHz on a separate board. Another board, a
> modified version of the W1GHz "Personal beacon for 10368 MHz," multiplies
> this to 11880 MHz. I get +12 dBm out of that circuit, so I use an attenuator
> to bring it to +8 dBm LO input to the SDH unit.
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> The Endwave unit has a waveguide a filter I got from Joe KI4NPV, which he
> had pretuned to 24192 MHz.
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> After I had assembled this whole thing. I had no way of testing it on
> receive, but my HP 435B power meter indicated it was putting out a watt.
> When I first tried using this transverter setup in the 10+ GHz contest far
> away from home several years ago, it didn't seem to be working. I was set up
> right next to another station who was working people across Lake Michigan
> from the Wisconsin side. I could not hear him on receive and he couldn't
> hear me on transmit. When I got home, I checked it out and everything seemed
> to be working.
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> Then, a couple years ago I was in the 10+ GHz contest in Wisconsin again,
> roving with with Pete K9PW. My system didn't seem to be working at our first
> stop, but later that day it did. I worked across the lake several times,
> with QSO's in the 70 to 80 mile range. Also, in some other contest (Fall
> Sprint?) I worked Garry K3SIW on 24 GHz over a 107 mile path.
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> Then last September I tried working K9PW and K3SIW on 24 GHz with it,
> unsuccessfully. Pete then drove to my QTH and I watched him work K3SIW on 24
> GHz. I could not hear Pete's signal on 24 GHz with him right next to me, and
> he couldn't hear any signal from me. I had no way of measuring if it was
> putting out any power in the field.
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> I just got around to checking everything out. I still don't have a way of
> checking it out on receive. I did check out the LO and IF power levels. They
> were all as described above. Also, the unit was putting out 1 watt. I am
> assuming the 1 watt must be on the proper frequency because of the waveguide
> filter. Joe, if you're reading this, is this most likely true? What is the
> bandwidth of those filters after you've tuned them to 24192?
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> So I am wondering if there is some sort of intermittent problem with the
> Endwave unit itself, or if there is an intermittent peoblem with any of the
> associated circuitry I've built. I'm kind of stymied by this. In the field,
> all I can check out is the voltages to the SDH unit and otherwise, and they
> all seem to be correct. I can also check the 432 transverter part of the
> system in the field, and it seems OK too. Then, when I get it home,
> everything I can check out seems OK. I also check out the hardware for any
> loose screws. There are none.

>
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> Is there any known intermittent problem with the Endwave SDH units?
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> 73, Zack W9SZ
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> No virus found in this message.
> Checked by AVG - www.avg.com
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426. Re: Endwave SDH unit problem?

Yahoo group: 24GHzHam
Date: 2015-02-09 13:39:05 UTC
From: brian.flynn@tiscali.co.uk
Topic: 422 Message: 426

Hi Zack,

I also use the Endwave units in my transverter and I have built up a couple of units for other people. One problem I have encountered, especially when running portable is that the interlock on the LT1083 LDO regulator cuts in if the negative rail is slow in coming up compared to the +ve rail. When that happens it seems to go into a kind of lock down state to protect the MMICs. I got round this in my units by fitting a low value resistor (0.5 Ohm if I recall) in series with the +ve rail and by bypassing it with a 2200mF cap. That has the effect of slowing the rise of the +ve rail. A bit crude I know but it is effective. It gives enough time for the -ve rail inverter to get going and settle down when power is applied to the unit.

In fact I was using mine yesterday to work GM0USI/P over and 86 km obstructed path, 5 and 3 each way from my home QTH.

73s
GM8BJF
--
Dr Brian W Flynn
15 Riselaw Crescent
Edinburgh
EH10 6HN

0131 447 4043

427. Re: [24GHzHam] Endwave SDH unit problem?

Yahoo group: 24GHzHam
Date: 2015-02-09 16:27:07 UTC
From: Zack Widup
Topic: 422 Message: 427

Hi Joe,

I kind of had that idea. I don't know, though; the basic PLL circuit is a design by KD6OZH. It uses am MC145158. It has a pin which indicates phase-lock or lack of it. I have the circuit set up so an LED on the front panel comes on when it's locked. The circuit is pretty good about indicating when it's locked or not. When I was last using it in the field, I remember the PLL light was on the whole time.

There could've been a problem with a later stage not putting anything out, though. That's one thing I don't know.

When I checked it out over the weekend, if I unplugged the power plug from the SDH unit, the noise level dropped dramatically. Same if I turned off or unplugged the LO for either the SDH unit or the 432 MHz transverter. And I got no power out of the unit if I did the same. With everything connected correctly, I was getting one watt out yesterday. So maybe it was actually working then. I need some sort of a test signal on 24 GHz to listen for.

The two pipe cap filters on the final LO circuit multiplier at 11880 MHz are pretty narrow. I don't think they would pass anything more than a few hundred MHz off in frequency, at least not without some serious attenuation.

73, Zack W9SZ

On Sun, Feb 8, 2015 at 10:44 PM, 'Joseph Ruggieri' jruggieri3@...
[24GHzHam] <24GHzHam@yahoogroups.com> wrote:

>
>
> □
> Hi Zack,
>
> Your LO accuracy sounds very good.
> Next I would suspect the LO going in and out of lock or failing in some
> other way.
> One of the things I put on all my tower mounted transverters is a PTT push
> button switch in the shack that takes the transverter from RX to TX with no
> RF applied.
> I push the button and listen for the receiver background noise on the
> radio to drop in level.
> If it goes from a loud noise to quiet when pushed I know the LO is there
> and locked and the TX relay and mixer are working.
> If no change when I push the button I know the LO is gone, out of lock or
> I have a blown mixer.
> The PB operates the relays in which ever band I have selected.

> I go through all bands as a test prior to each contest.
>
> Another possibility is that one of the filters after the frequency
> multipliers is too wide swapping back and forth on several harmonics.
> This can also happen on the Macom bricks as well if the reference
> frequency is too low (10MHz instead of 100MHZ range reference) and the
> output will jump up or down from the correct frequency.
>
> Joe
>
>
>
> ----- Original Message -----
> *From:* Zack Widup w9sz.zack@... [24GHzHam]
> <w9sz.zack@...+[24GHzHam]>
> *To:* 24GHzHam@yahoogroups.com
> *Sent:* Sunday, February 08, 2015 8:19 PM
> *Subject:* Re: [24GHzHam] Endwave SDH unit problem?
>
>
>
> Hi Joe,
>
> Thanks. My reference LO is locked to is an Isotemp OCXO. I calibrate
> them every so often against a rubidium standard. Drift is less than
> 0.1 Hz at 10 MHz. With a 10 GHz LO phase-locked to it, it drifts less
> than 20 Hz and is usually within a couple hundred Hz accuracy. I don't
> think that is the problem. When it does work and I make some QSO's, it
> is within a kHz accuracy and less than 50 Hz drift.
>
> I just wondered if somehow the LO came untuned and was passing a
> different harmonic of 1485 MHz. If the waveguide filter is only 200
> MHz wide, I don't see that as the problem, either.
>
> I guess I need to put together some sort of signal source for 24192
> and also some sort of power meter I can use in the field to determine
> if it is putting out power.
>
> 73, Zack W9SZ
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> On 2/8/15, 'Joseph Ruggieri' jruggieri3@... [24GHzHam]
> <24GHzHam@yahoogroups.com> wrote:
> > Hello Zack and others interested in this topic,
> >
> > First of all I don't know of any intermittent problems with these
> > transcievers.
> > For your question on the transmit filter, it is broad, about 200MHz
> which is
> > plenty good to filter out the L.O.

> > The receive on these is done with image reject mixers so no LO or image
> > filter required.
> > After reading your history, I would bet your problem is a drifting
> > reference.
> > You stated the 165MHz was phase locked, but to what?
> > My requirement when I build transverters for 10GHz and up is to keep the
> LO
> > frequency within 100Hz after warm-up.
> > (I have built 4 transverters using these transceivers, one on my tower
> and 3
> > that I loan out for contests.)
> > This will likely make you the most accurate in any contact which
> eliminates
> > one variable.
> > I find that most contacts that I make the other end of the contact is
> > 2-10KHz off frequency at 24GHGz.
> > If both party's in the contact are off or drifting the probability of
> making
> > a contact and pointing directly at each other within 2 degrees is very
> > unlikely.
> > Just too many variables not counting QSB and moisture absorption on this
> > band.
> > I wish you were closer to me, EL98hr . I have a beacon at 24.192 using
> one
> > of the SDH.
> > I maintain it within 100Hz of 24.192.
> >
> > KI4NPV
> >
> >
> >
> > ----- Original Message -----
> > From: Zack Widup w9sz.zack@... [24GHzHam]
> > To: 24GHzHam@yahoogroups.com
> > Sent: Sunday, February 08, 2015 5:46 PM
> > Subject: [24GHzHam] Endwave SDH unit problem?
> >
> >
> >
> >
> > I have had one of these units for several years. I built a transverter
> > system around it. Here's the details: I built a W1GHZ Miniverter-F with a
> > 432 MHz helical filter instead of the 144 MHz one he used. It has an
> > external 404 MHz LO. This has always seemed to be working fine as a 432
> to
> > 28 MHz IF. It supplies about +5 dBm on 432 MHz to the Endwave unit on
> > transmit. My LO for the Endwave unit starts with a 165 MHz phase-locked
> VCXO
> > and multipies this to 1485 MHz on a separate board. Another board, a

> > modified version of the W1GHz "Personal beacon for 10368 MHz," multiplies
> > this to 11880 MHz. I get +12 dBm out of that circuit, so I use an
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> > roving with with Pete K9PW. My system didn't seem to be working at our
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> > Then last September I tried working K9PW and K3SIW on 24 GHz with it,
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> > checking it out on receive. I did check out the LO and IF power levels.
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> > assuming the 1 watt must be on the proper frequency because of the
> waveguide
> > filter. Joe, if you're reading this, is this most likely true? What is
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> > system in the field, and it seems OK too. Then, when I get it home,
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> > loose screws. There are none.
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> > Is there any known intermittent problem with the Endwave SDH units?
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> > 73, Zack W9SZ
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>

428. Re: [24GHzHam] Re: Endwave SDH unit problem?

Yahoo group: 24GHzHam
Date: 2015-02-09 16:29:02 UTC
From: Zack Widup
Topic: 422 Message: 428

Hi Brian,

Hmm, I didn't know about that. That is a distinct possibility. I'll have to look at that!

73, Zack W9SZ

On Mon, Feb 9, 2015 at 7:39 AM, 'brian.flynn@...' brian.flynn@... [24GHzHam] <24GHzHam@yahoogroups.com> wrote:

>
>
> Hi Zack,
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> I also use the Endwave units in my transverter and I have built up a
> couple of units for other people. One problem I have encountered,
> especially when running portable is that the interlock on the LT1083 LDO
> regulator cuts in if the negative rail is slow in coming up compared to
> the +ve rail. When that happens it seems to go into a kind of lock down
> state to protect the MMICs. I got round this in my units by fitting a
> low value resistor (0.5 Ohm if I recall) in series with the +ve rail and
> by bypassing it with a 2200mF cap. That has the effect of slowing the
> rise of the +ve rail. A bit crude I know but it is effective. It gives
> enough time for the -ve rail inverter to get going and settle down when
> power is applied to the unit.
>
> In fact I was using mine yesterday to work GM0USI/P over and 86 km
> obstructed path, 5 and 3 each way from my home QTH.
>
> 73s
> GM8BJF
> --
> Dr Brian W Flynn
> 15 Riselaw Crescent
> Edinburgh
> EH10 6HN
>
> 0131 447 4043
>
>

429. Re: [24GHzHam] Endwave SDH unit problem?

Yahoo group: 24GHzHam
Date: 2015-02-10 21:26:10 UTC
From: Joseph Ruggieri
Topic: 422 Message: 429

Hi Zack,

I am glad I was working for you the other day.
When is stops working again note if the received noise is low or high as you did when it was working.
This will tell you if the LO has failed.
In your earlier comments when working across the lake you commented that you were unable to RX or TX.
Besides the power supplies, the only other thing common in the endwave transeivers is the LO and the associated frequency doubler.
So, if you can measure 1 watt output I am sure the receiver is working as well.
I can't find any justification on the comments made about lock-up during power sequencing.
I went through the board schematics and found no way for that to happen since it only looks for the +v and the -V to be within spec. before
enabling the LDO regulator.
When I test these on the bench is use three independent metered power supplies and the last one up enables the regulator.
I would be interested in what you find to be the cause.
Joe KI4NPV

----- Original Message -----
From: Zack Widup w9sz.zack@... [24GHzHam]
To: 24GHzHam@yahoogroups.com
Sent: Monday, February 09, 2015 11:27 AM
Subject: Re: [24GHzHam] Endwave SDH unit problem?

Hi Joe,

I kind of had that idea. I don't know, though; the basic PLL circuit is a design by KD6OZH. It uses am MC145158. It has a pin which indicates phase-lock or lack of it. I have the circuit set up so an LED on the front panel comes on when it's locked. The circuit is pretty good about indicating when it's locked or not. When I was last using it in the field, I remember the PLL light was on the whole time.

There could've been a problem with a later stage not putting anything out, though. That's one thing I don't know.

When I checked it out over the weekend, if I unplugged the power plug from the SDH unit, the noise level dropped dramatically. Same if I turned off or unplugged the LO for either the SDH unit or the 432 MHz transverter. And I got no power out of the unit if I did the same. With everything connected correctly, I was getting one watt out yesterday. So maybe it was actually working then. I need some sort of a test signal on 24 GHz to listen for.

The two pipe cap filters on the final LO circuit multiplier at 11880 MHz are pretty narrow. I don't think they would pass anything more than a few hundred MHz off in frequency, at least not without some serious attenuation.

73, Zack W9SZ

On Sun, Feb 8, 2015 at 10:44 PM, 'Joseph Ruggieri' jruggieri3@... [24GHzHam] <24GHzHam@yahoogroups.com> wrote:

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Your LO accuracy sounds very good.
Next I would suspect the LO going in and out of lock or failing in some other way.
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RF applied.
I push the button and listen for the receiver background noise on the radio to drop in level.
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The PB operates the relays in which ever band I have selected.
I go through all bands as a test prior to each contest.

Another possibility is that one of the filters after the frequency multipliers is too wide swapping back and forth on several harmonics.
This can also happen on the Macom bricks as well if the reference frequency is too low (10MHz instead of 100MHZ range reference) and the output will jump up or down from the correct frequency.

Joe

----- Original Message -----
From: Zack Widup w9sz.zack@gmail.com [24GHzHam]
To: 24GHzHam@yahoogroups.com
Sent: Sunday, February 08, 2015 8:19 PM
Subject: Re: [24GHzHam] Endwave SDH unit problem?

Hi Joe,

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I just wondered if somehow the LO came untuned and was passing a different harmonic of 1485 MHz. If the waveguide filter is only 200 MHz wide, I don't see that as the problem, either.

I guess I need to put together some sort of signal source for 24192 and also some sort of power meter I can use in the field to determine if it is putting out power.

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On 2/8/15, 'Joseph Ruggieri' jruggieri3@... [24GHzHam]
<24GHzHam@yahoogroups.com> wrote:
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> I maintain it within 100Hz of 24.192.
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> KI4NPV
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> To: 24GHzHam@yahoogroups.com
> Sent: Sunday, February 08, 2015 5:46 PM
> Subject: [24GHzHam] Endwave SDH unit problem?
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> 73, Zack W9SZ
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Checked by AVG - www.avg.com
Version: 2015.0.5646 / Virus Database: 4281/9081 - Release Date: 02/09/15

430. Re: [24GHzHam] Endwave SDH unit problem?

Yahoo group: 24GHzHam
Date: 2015-04-24 21:12:35 UTC
From: w9sz.zack@...
Topic: 422 Message: 430

The unit seems to be consistently working now. We had a little get-together of 24 GHz enthusiasts from the St. Louis area last weekend and a couple of us set up in a small park. We were able to work each other. Hopefully it will continue to work. I'm taking it out for the Spring Microwave Sprint in a few weeks.

73, Zack W9SZ

---In 24GHzHam@yahoogroups.com, <jruggieri3@...> wrote :

☐ Hi Zack,

I am glad I was working for you the other day.
When is stops working again note if the received noise is low or high as you did when it was working.
This will tell you if the LO has failed.
In your earlier comments when working across the lake you commented that you were unable to RX or TX.
Besides the power supplies, the only other thing common in the endwave transeivers is the LO and the associated frequency doubler.
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enabling the LDO regulator.
When I test these on the bench is use three independent metered power supplies and the last one up enables the regulator.
I would be interested in what you find to be the cause.
Joe KI4NPV

431. New file uploaded to 24GHzHam

Yahoo group: 24GHzHam
Date: 2015-04-27 16:33:51 UTC
From: 24GHzHam@yahoogroups.com
Topic: 31 Message: 431

Hello,

This email message is a notification to let you know that
a file has been uploaded to the Files area of the 24GHzHam
group.

File : /F5BQP/SSPA-Dual-TGA4915CP_F5BQP-EME2014.pdf
Uploaded by : f5bqp_pfm <pfmonet@...>
Description : This paper has been presented during the EME2014 conference in August 2014 at Pleumeur Bodou (Britanny)

You can access this file at the URL:
https://groups.yahoo.com/neo/groups/24GHzHam/files/F5BQP/SSPA-Dual-TGA4915CP_F5BQP-EME2014.pdf

To learn more about file sharing for your group, please visit:
https://help.yahoo.com/kb/index?page=content&y=PROD_GRPS&locale=en_US&id=SLN15398

Regards,

f5bqp_pfm <pfmonet@...>

432. New file uploaded to 24GHzHam

Yahoo group: 24GHzHam
Date: 2015-09-20 17:55:23 UTC
From: 24GHzHam@yahoogroups.com
Topic: 31 Message: 432

```
Hello,

This email message is a notification to let you know that
a file has been uploaded to the Files area of the 24GHzHam
group.

File : /Elcom_DFS1201/IMG_3378.JPG
Uploaded by : oh2liy <rami.vainio@...>
Description :

You can access this file at the URL:
https://groups.yahoo.com/neo/groups/24GHzHam/files/Elcom_DFS1201/IMG_3378.JPG

To learn more about file sharing for your group, please visit:
https://help.yahoo.com/kb/index?page=content&y=PROD_GRPS&locale=en_US&id=SLN15398

Regards,

oh2liy <rami.vainio@...>
```

433. New file uploaded to 24GHzHam

Yahoo group: 24GHzHam
Date: 2015-09-20 17:55:34 UTC
From: 24GHzHam@yahoogroups.com
Topic: 31 Message: 433

```
Hello,

This email message is a notification to let you know that
a file has been uploaded to the Files area of the 24GHzHam
group.

File : /Elcom_DFS1201/IMG_3380.JPG
Uploaded by : oh2liy <rami.vainio@...>
Description :

You can access this file at the URL:
https://groups.yahoo.com/neo/groups/24GHzHam/files/Elcom_DFS1201/IMG_3380.JPG

To learn more about file sharing for your group, please visit:
https://help.yahoo.com/kb/index?page=content&y=PROD_GRPS&locale=en_US&id=SLN15398

Regards,

oh2liy <rami.vainio@...>
```

434. New file uploaded to 24GHzHam

Yahoo group: 24GHzHam
Date: 2015-09-20 17:55:54 UTC
From: 24GHzHam@yahoogroups.com
Topic: 31 Message: 434

Hello,

This email message is a notification to let you know that
a file has been uploaded to the Files area of the 24GHzHam
group.

File : /Elcom_DFS1201/IMG_3386.JPG
Uploaded by : oh2liy <rami.vainio@...>
Description :

You can access this file at the URL:
https://groups.yahoo.com/neo/groups/24GHzHam/files/Elcom_DFS1201/IMG_3386.JPG

To learn more about file sharing for your group, please visit:
https://help.yahoo.com/kb/index?page=content&y=PROD_GRPS&locale=en_US&id=SLN15398

Regards,

oh2liy <rami.vainio@...>

435. New file uploaded to 24GHzHam

Yahoo group: 24GHzHam
Date: 2015-09-20 17:57:40 UTC
From: 24GHzHam@yahoogroups.com
Topic: 31 Message: 435

```
Hello,

This email message is a notification to let you know that
a file has been uploaded to the Files area of the 24GHzHam
group.

File : /Elcom_DFS1201/elcom-11952MHz.HEX
Uploaded by : oh2liy <rami.vainio@...>
Description :

You can access this file at the URL:
https://groups.yahoo.com/neo/groups/24GHzHam/files/Elcom_DFS1201/elcom-11952MHz.HEX

To learn more about file sharing for your group, please visit:
https://help.yahoo.com/kb/index?page=content&y=PROD_GRPS&locale=en_US&id=SLN15398

Regards,

oh2liy <rami.vainio@...>
```

436. New file uploaded to 24GHzHam

Yahoo group: 24GHzHam
Date: 2015-09-20 17:54:58 UTC
From: 24GHzHam@yahoogroups.com
Topic: 31 Message: 436

Hello,

This email message is a notification to let you know that
a file has been uploaded to the Files area of the 24GHzHam
group.

File : /Elcom_DFS1201/ext10MHzto100MHz.jpg
Uploaded by : oh2liy <rami.vainio@...>
Description : external 10 MHz/100 Mhz LO

You can access this file at the URL:
https://groups.yahoo.com/neo/groups/24GHzHam/files/Elcom_DFS1201/ext10MHzto100MHz.jpg

To learn more about file sharing for your group, please visit:
https://help.yahoo.com/kb/index?page=content&y=PROD_GRPS&locale=en_US&id=SLN15398

Regards,

oh2liy <rami.vainio@...>

437. New file uploaded to 24GHzHam

Yahoo group: 24GHzHam
Date: 2015-09-20 17:57:33 UTC
From: 24GHzHam@yahoogroups.com
Topic: 31 Message: 437

```
Hello,

This email message is a notification to let you know that
a file has been uploaded to the Files area of the 24GHzHam
group.

File : /Elcom_DFS1201/elcom-11952MHz.asm
Uploaded by : oh2liy <rami.vainio@...>
Description :

You can access this file at the URL:
https://groups.yahoo.com/neo/groups/24GHzHam/files/Elcom_DFS1201/elcom-11952MHz.asm

To learn more about file sharing for your group, please visit:
https://help.yahoo.com/kb/index?page=content&y=PROD_GRPS&locale=en_US&id=SLN15398

Regards,

oh2liy <rami.vainio@...>
```

438. Debugging Elcom DFS1201 to 11952 MHz

Yahoo group: 24GHzHam
Date: 2015-09-20 18:08:08 UTC
From: rami.vainio@...
Topic: 438 Message: 438

I uploaded couple pictures&code how to modify Elcom DFS1201 12 GHz LO almost any wanted frequency. I removed original PIC and used SM6PGP code to directly program PMB2306 PLL chip. I reverse engineered original register settings and used them on SM6PGP code with new R&N&A counters.

Ramppa OH2LIY

439. Endwave and more

Yahoo group: 24GHzHam
Date: 2015-11-15 08:24:49 UTC
From: Ronny Lembke
Topic: 439 Message: 439

Hello group!I need your advise.Have an Endwave unit thats been said should be easy to use for 24GHz ham radio. I have been told that 432MHz is the best IF.....correct? I have also been told that putting a DB6NT LNA (1.4dB NF, 26dB gain) in front of the RX would probably kill it, and I have been advised that I should bypass the RX IF amplifier. What is your opinion on those statements?
Some years ago a friend and I bought Alcatel "White Box" units described in UK Microwave initiative by G4NNS et al, downconverter GBX124, PA-module BA2074C, and upconverter GBY310, GBY311, GBX331. My friend completed his setup but seemed to have destroyed his GBY310. He borrowed my GBY311 which was destroyed. He think it is down to RF spikes on the TX IF from his ICOM tx.
Eventually he left all equipment to me for further tests. I tried the last available unit a GBX331 (using a signal osc as IF TX so very well controled levels) but I could not see, or hear, any up conversion coming out on 24GHz.
The 3dB coupler is 1A1306-3 in all three units. It seems to me that 11306-3 is a bit off in frequency if you intend to use 432 as IF.Any experience in those units? What kind of drive level should I use on IF 432MHz?
73 de Ronny SM7FWZ

440. Re: Endwave and more

Yahoo group: 24GHzHam
Date: 2015-11-15 11:16:34 UTC
From: brian.flynn@...
Topic: 439 Message: 440

Hi Ronnie,

A number of us in GM are using teh Endwave units. I have had on in a tranverter since about 2008. I have always used them just as they come, without any mods to the RF path. The first ones I got came from a guy called Kes in PA0-land. more recently I got one from Italy. The early ones came with original WG filter whch can be retuined to 24GHz, but were not on the Italian ones. Recently we have been using elcom DFS1201s as the LO. We programmed them to 11.810 GHz and it all goes togetether quite straightforwardly. This gives a 428 MHz IF but FT817s can be made to tune there. We have not used pre-amps as the Endwave units seem quite sensitive. We have had contacts up to 180 km from GM to GW with them Still need all the PTT switching etc. I have a wg24 WG switch for the antenna c/o but some of us have just been using a flexi WG which is moved back and forward between the ports on the Endwave.

The only mods I did to my early units was to reduce the bias currents on some of the MMICs to be within spec. Apparently they were overrun and had a short life. Whether that would matter in normal amateur operation is a moot point. You can see the mod from Pyro-Joe in the files scetion of this group.

73s Brian

GM8BJF

441. Re: [24GHzHam] Re: Endwave and more

Yahoo group: 24GHzHam
Date: 2015-11-15 11:44:30 UTC
From: Ronny Lembke
Topic: 439 Message: 441

Hi Brian, tnx for reply. My objective is to use the transverter for EME and hence I need a better NF. As a tropo system it is perfect as it is. I have retuned the WG filter and made the changes described by other hams. Will look at Pyro-Joe. I have seen a pwr supply suggestion that looks interesting compared to the original supply which I believe is a bit power consuming, according to others.73 tnx//Ronny

From: "brian.flynn@... [24GHzHam]" <24GHzHam@yahoogroups.com>
To: 24GHzHam@yahoogroups.com
Sent: Sunday, November 15, 2015 12:16 PM
Subject: [24GHzHam] Re: Endwave and more

Hi Ronnie,

A number of us in GM are using teh Endwave units. I have had on in a tranverter since about 2008. I have always used them just as they come, without any mods to the RF path. The first ones I got came from a guy called Kes in PA0-land. more recently I got one from Italy. The early ones came with original WG filter whch can be retuined to 24GHz, but were not on the Italian ones. Recently we have been using elcom DFS1201s as the LO. We programmed them to 11.810 GHz and it all goes togetether quite straightforwardly. This gives a 428 MHz IF but FT817s can be made to tune there. We have not used pre-amps as the Endwave units seem quite sensitive. We have had contacts up to 180 km from GM to GW with them Still need all the PTT switching etc. I have a wg24 WG switch for the antenna c/o but some of us have just been using a flexi WG which is moved back and forward between the ports on the Endwave.

The only mods I did to my early units was to reduce the bias currents on some of the MMICs to be within spec. Apparently they were overrun and had a short life. Whether that would matter in normal amateur operation is a moot point. You can see the mod from Pyro-Joe in the files scetion of this group.

73s Brian

GM8BJF

442. Re: [24GHzHam] Endwave and more

Yahoo group: 24GHzHam
Date: 2015-11-15 16:32:21 UTC
From: Zack Widup
Topic: 439 Message: 442

Hi Ronny

I have been using an Endwave unit for a few years now. I recently made about 12 QSO's with it across Lake Michigan in the 10+ GHz contest.

The only mods I did on the unit were the changes of certain resistor values as recommended by Joe KI4NPV to change the bias on one of the amp stages to keep the stage from burning out/failing. These are documented by photos in the Files section of the group's page. I am using 432 MHz as the IF.

I believe my LO drive level at 12024 MHz is +7 dBm and the IF rig drive level is about +6 dBm. Mine puts out about a watt at 24 GHz.

The receiver may not have the best NF but it has so much gain that Joe KI4NPV recommends not to use any preamp with the Endwave unit because it could burn out your IF rig's front end.

I was Roving with Pete K9PW in the September weekend of the 10 GHz contest. His 24 GHz rig hears a little better than mine, plus I an using a 1-foot diameter dish and he has a 2-foot diameter dish. Still, I heard most of the signals from 75 to 100 miles away that Pete was hearing and was surprised to find out some of the guys at the other end were running 100 mW or less to small horns.

Good luck with your endeavors with the Endwave unit. There are a lot of knowledgeable people on this group, particularly Joe KI4NPV.

73, Zack W9SZ

On Sun, Nov 15, 2015 at 2:24 AM, Ronny Lembke m0fwz@... [24GHzHam] <
24GHzHam@yahoogroups.com> wrote:

>
>
> Hello group!
> I need your advise.
> Have an Endwave unit thats been said should be easy to use for 24GHz ham
> radio. I have been told that 432MHz is the best IF.....correct? I have
> also been told that putting a DB6NT LNA (1.4dB NF, 26dB gain) in front of
> the RX would probably kill it, and I have been advised that I should bypass
> the RX IF amplifier. What is your opinion on those statements?
>
> Some years ago a friend and I bought Alcatel "White Box" units described
> in UK Microwave initiative by G4NNS et al, downconverter GBX124, PA-module
> BA2074C, and upconverter GBY310, GBY311, GBX331. My friend completed his
> setup but seemed to have destroyed his GBY310. He borrowed my GBY311 which
> was destroyed. He think it is down to RF spikes on the TX IF from his ICOM

> tx.
> Eventually he left all equipment to me for further tests. I tried the last
> available unit a GBX331 (using a signal osc as IF TX so very well controled
> levels) but I could not see, or hear, any up conversion coming out on
> 24GHz.
> The 3dB coupler is 1A1306-3 in all three units. It seems to me that
> 11306-3 is a bit off in frequency if you intend to use 432 as IF.
> Any experience in those units? What kind of drive level should I use on IF
> 432MHz?
>
> 73 de Ronny SM7FWZ
>
>
>
>

443. Re: [24GHzHam] Endwave and more

Yahoo group: 24GHzHam
Date: 2015-11-15 17:41:57 UTC
From: Ronny Lembke
Topic: 439 Message: 443

Zack, tnx for the reply. I should listen to the advice to skip some of the IF gain blocks. I'll eventually will have time for a closer look at the design. This is very exiting.73 de Ronny SM7FWZ

From: "Zack Widup w9sz.zack@... [24GHzHam]" <24GHzHam@yahoogroups.com>
To: 24GHzHam@yahoogroups.com
Sent: Sunday, November 15, 2015 5:32 PM
Subject: Re: [24GHzHam] Endwave and more

Hi Ronny

I have been using an Endwave unit for a few years now. I recently made about 12 QSO's with it across Lake Michigan in the 10+ GHz contest.

The only mods I did on the unit were the changes of certain resistor values as recommended by Joe KI4NPV to change the bias on one of the amp stages to keep the stage from burning out/failing. These are documented by photos in the Files section of the group's page. I am using 432 MHz as the IF.

I believe my LO drive level at 12024 MHz is +7 dBm and the IF rig drive level is about +6 dBm. Mine puts out about a watt at 24 GHz.

The receiver may not have the best NF but it has so much gain that Joe KI4NPV recommends not to use any preamp with the Endwave unit because it could burn out your IF rig's front end.

I was Roving with Pete K9PW in the September weekend of the 10 GHz contest. His 24 GHz rig hears a little better than mine, plus I an using a 1-foot diameter dish and he has a 2-foot diameter dish. Still, I heard most of the signals from 75 to 100 miles away that Pete was hearing and was surprised to find out some of the guys at the other end were running 100 mW or less to small horns.

Good luck with your endeavors with the Endwave unit. There are a lot of knowledgeable people on this group, particularly Joe KI4NPV.

73, Zack W9SZ

On Sun, Nov 15, 2015 at 2:24 AM, Ronny Lembke m0fwz@... [24GHzHam] <24GHzHam@yahoogroups.com> wrote:

Hello group!I need your advise.Have an Endwave unit thats been said should be easy to use for 24GHz ham radio. I have been told that 432MHz is the best IF.....correct? I have also been told that putting a DB6NT LNA (1.4dB NF, 26dB gain) in front of the RX would probably kill it, and I have been advised that I should bypass the RX IF amplifier. What is your opinion on those statements?
Some years ago a friend and I bought Alcatel "White Box" units described in UK Microwave initiative by G4NNS et al, downconverter GBX124, PA-module BA2074C, and upconverter GBY310, GBY311, GBX331. My friend completed his setup but seemed to have destroyed his

GBY310. He borrowed my GBY311 which was destroyed. He think it is down to RF spikes on the TX IF from his ICOM tx.
Eventually he left all equipment to me for further tests. I tried the last available unit a GBX331 (using a signal osc as IF TX so very well controled levels) but I could not see, or hear, any up conversion coming out on 24GHz.
The 3dB coupler is 1A1306-3 in all three units. It seems to me that 11306-3 is a bit off in frequency if you intend to use 432 as IF.Any experience in those units? What kind of drive level should I use on IF 432MHz?
73 de Ronny SM7FWZ

444. Re: [24GHzHam] Endwave and more

Yahoo group: 24GHzHam
Date: 2015-11-15 19:08:52 UTC
From: Zack Widup
Topic: 439 Message: 444

I'm using a double-conversion scheme in mine. I'm using one of the W1GHZ Miniverters with a 432 MHz helical filter and 404 MHz LO, which converts to 28 MHz. The gain in this Miniverter circuit is minimal, yet I still hear quite well on 24 GHz. The 28 MHz IF I have been using is a Realistic HTX-100.

73, Zack W9SZ

On Sun, Nov 15, 2015 at 11:41 AM, Ronny Lembke m0fwz@yahoo.com [24GHzHam] <
24GHzHam@yahoogroups.com> wrote:

>
>
> Zack, tnx for the reply. I should listen to the advice to skip some of the
> IF gain blocks. I'll eventually will have time for a closer look at the
> design. This is very exiting.
> 73 de Ronny SM7FWZ
>
> ----------
> *From:* "Zack Widup w9sz.zack@... [24GHzHam]" <
> 24GHzHam@yahoogroups.com>
> *To:* 24GHzHam@yahoogroups.com
> *Sent:* Sunday, November 15, 2015 5:32 PM
> *Subject:* Re: [24GHzHam] Endwave and more
>
>
> Hi Ronny
>
> I have been using an Endwave unit for a few years now. I recently made
> about 12 QSO's with it across Lake Michigan in the 10+ GHz contest.
>
> The only mods I did on the unit were the changes of certain resistor
> values as recommended by Joe KI4NPV to change the bias on one of the amp
> stages to keep the stage from burning out/failing. These are documented by
> photos in the Files section of the group's page. I am using 432 MHz as the
> IF.
>
> I believe my LO drive level at 12024 MHz is +7 dBm and the IF rig drive
> level is about +6 dBm. Mine puts out about a watt at 24 GHz.
>
> The receiver may not have the best NF but it has so much gain that Joe
> KI4NPV recommends not to use any preamp with the Endwave unit because it
> could burn out your IF rig's front end.
>
> I was Roving with Pete K9PW in the September weekend of the 10 GHz
> contest. His 24 GHz rig hears a little better than mine, plus I an using a

> 1-foot diameter dish and he has a 2-foot diameter dish. Still, I heard most
> of the signals from 75 to 100 miles away that Pete was hearing and was
> surprised to find out some of the guys at the other end were running 100 mW
> or less to small horns.
>
> Good luck with your endeavors with the Endwave unit. There are a lot of
> knowledgeable people on this group, particularly Joe KI4NPV.
>
> 73, Zack W9SZ
>
>
>
>
> On Sun, Nov 15, 2015 at 2:24 AM, Ronny Lembke m0fwz@... [24GHzHam] <
> 24GHzHam@yahoogroups.com> wrote:
>
>
> Hello group!
> I need your advise.
> Have an Endwave unit thats been said should be easy to use for 24GHz ham
> radio. I have been told that 432MHz is the best IF.....correct? I have
> also been told that putting a DB6NT LNA (1.4dB NF, 26dB gain) in front of
> the RX would probably kill it, and I have been advised that I should bypass
> the RX IF amplifier. What is your opinion on those statements?
>
> Some years ago a friend and I bought Alcatel "White Box" units described
> in UK Microwave initiative by G4NNS et al, downconverter GBX124, PA-module
> BA2074C, and upconverter GBY310, GBY311, GBX331. My friend completed his
> setup but seemed to have destroyed his GBY310. He borrowed my GBY311 which
> was destroyed. He think it is down to RF spikes on the TX IF from his ICOM
> tx.
> Eventually he left all equipment to me for further tests. I tried the last
> available unit a GBX331 (using a signal osc as IF TX so very well controled
> levels) but I could not see, or hear, any up conversion coming out on
> 24GHz.
> The 3dB coupler is 1A1306-3 in all three units. It seems to me that
> 11306-3 is a bit off in frequency if you intend to use 432 as IF.
> Any experience in those units? What kind of drive level should I use on IF
> 432MHz?
>
> 73 de Ronny SM7FWZ
>
>
>
>
>
>
>

445. Re: Debugging Elcom DFS1201 to 11952 MHz

Yahoo group: 24GHzHam
Date: 2015-11-19 20:03:16 UTC
From: adam9a4qv@...
Topic: 438 Message: 445

Hello Ramppa,

I have a few questions regarding your project.
I went through the uploaded .asm code for the project and found a few odd things (for me odd) :-)

1. the binary values in the comments for the N/A and R counters does not correspond to the HEX value for the byte 3 in both cases. Converting the binary values to hex and doing the math the output frequency should be 12000 Mhz.

2. the hex values used in the .asm code for the same project doing the math should result the output frequency of 10944 MHz and not 11952 MHz.

3. Did you compile the .asm file for the 16C84 and burn that hex to 16F84A or you play with the FUSES?

Are there any other "hidden" traps in the project :-) ?

thanks
Adam

446. Re: Debugging Elcom DFS1201 to 11952 MHz

Yahoo group: 24GHzHam
Date: 2015-11-21 18:36:05 UTC
From: rami.vainio@...
Topic: 438 Message: 446

I did first test to 12.000GHz and thats why there could be old comments left. Hex values are right, you just have to really carefully check them when you changing them (it's very easy to miss msb/lsb and 0 stuffing bits).

Compiling 16c84/16f84 don't matter when selecting right type on programmer, and check fuses (there was one fuse flipped between C84 -> F84 if I remember correctly).

Something weird is on code, timing or something else (voltages rises very slowly on brick). I was lazy and didn't start to debug again, I just put code loading PLL twice and after that PLL locked 100% every time when powered.

This was just basic idea how to remove unworking part and get brick to wanted frequency:)

Ramppa

---In 24GHzHam@yahoogroups.com, <adam9a4qv@...> wrote :

Hello Ramppa,

I have a few questions regarding your project.
I went through the uploaded .asm code for the project and found a few odd things (for me odd) :-)

1. the binary values in the comments for the N/A and R counters does not correspond to the HEX value for the byte 3 in both cases. Converting the binary values to hex and doing the math the output frequency should be 12000 Mhz.

2. the hex values used in the .asm code for the same project doing the math should result the output frequency of 10944 MHz and not 11952 MHz.

3. Did you compile the .asm file for the 16C84 and burn that hex to 16F84A or you play with the FUSES?

Are there any other "hidden" traps in the project :-) ?

thanks
Adam

447. Re: Debugging Elcom DFS1201 to 11952 MHz

Yahoo group: 24GHzHam
Date: 2015-11-24 23:41:00 UTC
From: adam9a4qv@...
Topic: 438 Message: 447

Hello Ramppa,

thanks for the update. All clear now. You were right, I made a mistake when converting the LSB/MSB on the R and the N/A divider with the binary numbers.

Regarding the lazy locking, it may be the problem with the DFS unit (PLL) rather then the code.

thanks again,
Adam

448. New file uploaded to 24GHzHam

Yahoo group: 24GHzHam
Date: 2016-09-08 15:21:53 UTC
From: 24GHzHam@yahoogroups.com
Topic: 31 Message: 448

Hello,

This email message is a notification to let you know that
a file has been uploaded to the Files area of the 24GHzHam
group.

File : /Elcom_DFS1201/elcom-11664MHz.asm
Uploaded by : oh2liy <rami.vainio@...>
Description : (47088 MHz- 432 MHz)/4

You can access this file at the URL:
https://groups.yahoo.com/neo/groups/24GHzHam/files/Elcom_DFS1201/elcom-11664MHz.asm

To learn more about file sharing for your group, please visit:
https://help.yahoo.com/kb/index?page=content&y=PROD_GRPS&locale=en_US&id=SLN15398

Regards,

oh2liy <rami.vainio@...>

449. Microwave Update 2016

Yahoo group: 24GHzHam
Date: 2016-09-08 15:39:37 UTC
From: Zack Widup
Topic: 449 Message: 449

I'd just like to mention that there is one week left on the Early Bird Special for Microwave Update. The special ends on September 15. It includes the conference fee, Proceedings, and Friday and Saturday lunches for $99 USD. Banquet cost is separate in either case.

http://www.ullmann.us/MUD2016/

73, Zack W9SZ

450. Re: [24GHzHam] New file uploaded to 24GHzHam

Yahoo group: 24GHzHam
Date: 2016-09-08 16:04:19 UTC
From: Barry Malowanchuk
Topic: 31 Message: 450

What is an asm file type?

Barry VE4MA

----- Original Message -----

From: 24GHzHam@yahoogroups.com
To: 24GHzHam@yahoogroups.com
Sent: Thursday, September 8, 2016 10:21:53 AM
Subject: [24GHzHam] New file uploaded to 24GHzHam

Hello,

This email message is a notification to let you know that
a file has been uploaded to the Files area of the 24GHzHam
group.

File : /Elcom_DFS1201/elcom-11664MHz.asm
Uploaded by : oh2liy <rami.vainio@...>
Description : (47088 MHz- 432 MHz)/4

You can access this file at the URL:
https://groups.yahoo.com/neo/groups/24GHzHam/files/Elcom_DFS1201/elcom-11664MHz.asm

To learn more about file sharing for your group, please visit:
https://help.yahoo.com/kb/index?page=content&y=PROD_GRPS&locale=en_US&id=SLN15398

Regards,

oh2liy <rami.vainio@...>

451. Re: [24GHzHam] New file uploaded to 24GHzHam

Yahoo group: 24GHzHam
Date: 2016-09-08 16:27:28 UTC
From: Zack Widup
Topic: 31 Message: 451

It's generally an assembly-language program for a microcontroller that you would then run through an assembler program to create the machine language code to program the particular part. Every microcontroller program seems to use a file ending in .asm but each is written for that particular microcontroller.

I write a lot of assembler code and can program PIC's and AVR's. This particular one is for the Microchip 16C84/16F84. It uses a 16F84 to send command bits to the Elcom 11664 to tell it what frequency to generate.

73, Zack W9SZ

On Thu, Sep 8, 2016 at 11:04 AM, Barry Malowanchuk ve4ma@shaw.ca [24GHzHam] <24GHzHam@yahoogroups.com> wrote:

>
>
> What is an asm file type?
>
> Barry VE4MA
>
> ----------
> *From: *24GHzHam@yahoogroups.com
> *To: *24GHzHam@yahoogroups.com
> *Sent: *Thursday, September 8, 2016 10:21:53 AM
> *Subject: *[24GHzHam] New file uploaded to 24GHzHam
>
>
>
>
> Hello,
>
> This email message is a notification to let you know that
> a file has been uploaded to the Files area of the 24GHzHam
> group.
>
> File : /Elcom_DFS1201/elcom-11664MHz.asm
> Uploaded by : oh2liy <rami.vainio@...>
> Description : (47088 MHz- 432 MHz)/4
>
> You can access this file at the URL:
> https://groups.yahoo.com/neo/groups/24GHzHam/files/Elcom_
> DFS1201/elcom-11664MHz.asm
>
> To learn more about file sharing for your group, please visit:
> https://help.yahoo.com/kb/index?page=content&y=PROD_

> GRPS&locale=en_US&id=SLN15398
>
> Regards,
>
> oh2liy <rami.vainio@...>
>
>
>

452. Re: [24GHzHam] New file uploaded to 24GHzHam

Yahoo group: 24GHzHam
Date: 2016-09-08 18:43:19 UTC
From: grahamstratford62@...
Topic: 31 Message: 452

Raimi,

I am confused about this asm file. Is it sufficient to use the WW2R circuit and PCB with a 12F675 or do you have to access other pins on the Elcom DFS1201? Are you changing the 3.3333 MHz spacing? More info is needed. My email address is gstratford1@cogeco.ca

Thanks and 73,

Graham Stratford VE3FHM

453. Re: [24GHzHam] New file uploaded to 24GHzHam

Yahoo group: 24GHzHam
Date: 2016-09-08 19:08:04 UTC
From: Zack Widup
Topic: 31 Message: 453

I am also confused by it. If it's for an ELCOM DFS-1201, something doesn't look right. The elcom-11664MHz.asm file says "This program loads the PMB2306 PLL with divider and status data." I don't know what that has to do with the DFS-1201. Also, this program is for a PIC 16F84, not a 12F675.

I know this controller works:

http://g4fre.com/dfs1201.htm

The assembler for a PIC 12F675 is in the references.

73, Zack W9SZ

On Thu, Sep 8, 2016 at 1:43 PM, grahamstratford62@... [24GHzHam] <
24GHzHam@yahoogroups.com> wrote:

>
>
> Raimi,
>
> I am confused about this asm file. Is it sufficient to use the WW2R
> circuit and PCB with a 12F675 or do you have to access other pins on the
> Elcom DFS1201? Are you changing the 3.3333 MHz spacing? More info is
> needed. My email address is gstratford1@...
>
> Thanks and 73,
>
> Graham Stratford VE3FHM
>
>
>

454. Re: [24GHzHam] New file uploaded to 24GHzHam

Yahoo group: 24GHzHam
Date: 2016-09-10 19:14:32 UTC
From: rami.vainio@...
Topic: 31 Message: 454

As it says, it loads directly PLL chip. You have to remove original pic inside of LO and wire directly to PLL clock/data/enable pins.

OH2LIY

455. Re: [24GHzHam] New file uploaded to 24GHzHam

Yahoo group: 24GHzHam
Date: 2017-01-05 08:36:48 UTC
From: g4fre@...
Topic: 31 Message: 455

I still ship 2 or 3 of these programmed 12f675 chips per year.....must be a lot of DFS1201 out there!

now i have a local (20km away) 47GHz beacon, i have even had to dust off one of my dfs1201 for the LO so i can monitor it 24x7

Dave
G4FRE, WW2R

456. Re: [24GHzHam] New file uploaded to 24GHzHam

Yahoo group: 24GHzHam
Date: 2017-01-12 14:23:27 UTC
From: adam9a4qv@...
Topic: 31 Message: 456

Hello Dave,

the 1201 are also gone from the market. 1295, 1301 long time ago.
Just some 35 pcs of 1101 remained on the e-bay market and that's it.

Friend of mine borrow me today a 1301 so I can quickly test my 76GHz transverter.
On the poor guy 47GHz transverter I also have the 1201 running without problems.

Adam

457. Thanks for adding me.

Yahoo group: 24GHzHam
Date: 2017-07-07 13:18:24 UTC
From: rtufty@...
Topic: 457 Message: 457

Hi,
Thanks for adding me. I've been playing around on 10GHz, with a HB100 and an Octagon LNB, and I've got a MiniKits frequency multiplier under construction. So how do I get on 24GHz for about the same budget?
Thanks.
Bill (M1BKF)

458. Re: [24GHzHam] Thanks for adding me.

Yahoo group: 24GHzHam
Date: 2017-07-07 15:12:41 UTC
From: Zack Widup
Topic: 457 Message: 458

Hi Bill,

Welcome to the world of millimeter waves. :-)

I'm not sure how you're using the HB100. A lot of us here do weak-signal work, which is on CW and SSB. That requires a transverter. I've found that if I build everything mostly from scratch, I can build a basic transverter up to 10 GHz for $150 or less. It gets more expensive as you go up in frequency, especially for power.

At 10 and 24 GHz, a lot of us are using Frequency West bricks locked to a phase-locked crystal oscillator for accuracy and stability. FW bricks range widely in price. I picked up a couple at the Dayton Hamvention this year for $15 apiece. But you'll see them on eBay for $30 to $200. For 24 GHz, try to find one that covers the 11.4 to 12 GHz range. I'm using a 432 MHz IF on 24192, so the brick runs at 11882 MHz (1/2 of 23760 MHz). I'm using a 99.0 MHz phase-locked crystal oscillator to lock my Frequency West brick at 11882 MHz. The frequency you choose depends on the IF frequency you want to use plus the 24 GHz frequency. In the USA, 24192 is the frequency used, but I believe in Europe they're using 24048.

Some years ago there were a number of surplus Endwave SDH transverters on the market. These were ideal for 24 GHz ham use; they put out a watt and don't need a receive preamp. I was lucky to get one of the last few around for around $150 or thereabouts. I've made a lot of QSO's with it, up to 110 miles (~175 km). If you want to spend some time and effort but less money, I'd recommend building the CT1DMK transverter. This consists of a series of modules. I made the boards for these myself and am putting one together. They are at http://www.qsl.net/ct1dmk/mw_hi.html. If you want to spend less time and more money, the DB6NT transverters are what most people are using.

I hope this helps and doesn't scare you off!

73, Zack W9SZ

On Fri, Jul 7, 2017 at 8:18 AM, rtufty@... [24GHzHam] <
24GHzHam@yahoogroups.com> wrote:

>
>
> Hi,
>
> Thanks for adding me. I've been playing around on 10GHz, with a HB100 and
> an Octagon LNB, and I've got a MiniKits frequency multiplier under
> construction. So how do I get on 24GHz for about the same budget?
>
> Thanks.

>
> Bill (M1BKF)
>
>
>

<https://www.avast.com/sig-email?utm_medium=email&utm_source=link&utm_campaign=sig-email&utm_content=webmail&utm_term=icon>
Virus-free.
www.avast.com
<https://www.avast.com/sig-email?utm_medium=email&utm_source=link&utm_campaign=sig-email&utm_content=webmail&utm_term=link>
<#m_-5917309386599690150_DAB4FAD8-2DD7-40BB-A1B8-4E2AA1F9FDF2>

459. Re: [24GHzHam] Thanks for adding me.

Yahoo group: 24GHzHam
Date: 2017-07-11 15:31:19 UTC
From: rtufty@...
Topic: 457 Message: 459

Hi Zack, I'm using the HB100 modules as a "DROplexer"
http://ham-radio.com/sbms/presentations/Walt_Clark/DROplexer.pdf
http://ham-radio.com/sbms/presentations/Walt_Clark/DROplexer.pdf Only I'm using an Octagon LNB for reception. Quite interestingly, someone on the microwaves group has pointed out the CDM324 doppler radar modules which are 5mW on the 24GHz band. No indication yet if they're tuneable, but I've ordered 2 to have a play.

The Kuhne stuff looks very nice, but a bit out of budget just now. The CT1DMK transverter looks interesting, I'll look into that in detail. Not particularly scared of construction, but I don't have access to test gear at these frequencies. I'll keep a look out for the Endwave SDH transverter and the Frequency West brick. BTW, that got me thinking; I've got a block upconverter that has a LO at 12.8GHz, I'll have to see if I can do anything with that.
Thanks for the info.
73 Bill (M1BKF)

460. Endwave unit step by step for beginner.

Yahoo group: 24GHzHam
Date: 2017-11-29 11:32:18 UTC
From: iw8pny@...
Topic: 460 Message: 460

Hello everyone. I'm starting the adventure on 24Ghz.
Several years ago I bought two units with power supply and a 2w amplifier.
So I need documentation ..... and tips how start.

Could you help me ?
Many Thanks

461. Re: [24GHzHam] Endwave unit step by step for beginner.

Yahoo group: 24GHzHam
Date: 2017-11-29 16:14:36 UTC
From: Zack Widup
Topic: 460 Message: 461

Hi,

Is it the Endwave SDH transceiver unit that you have? See the Files section and the file called "24 GHz SDH Key Posts.docx". This contains some important information about the SDH units.

Also, in the Photos section, see the photos called "SDH Mechanical.jpg" and "SDH_XCVR_Mod_Half_Duplex.jpg". There is some important information from Pyro Joe KI4NPV about some modifications to the unit to guarantee that the transmit chain continues to work. It involves replacing some of the resistors in the unit with different values.

These units put out about a watt. I have made many QSO's across Lake Michigan in Wisconsin with one of these units and an Endgate 1 foot diameter dish. These paths ranged from about 120 to 170 km.

If you have a different unit, there may be info on it in the Files and Photos section, too.

73, Zack W9SZ

On Wed, Nov 29, 2017 at 5:32 AM, iw8pny@... [24GHzHam] <
24GHzHam@yahoogroups.com> wrote:

>
>
> Hello everyone. I'm starting the adventure on 24Ghz.
> Several years ago I bought two units with power supply and a 2w amplifier.
> So I need documentation ..... and tips how start.
>
> Could you help me ?
> Many Thanks
>
>

<https://www.avast.com/sig-email?utm_medium=email&utm_source=link&utm_campaign=sig-email&utm_content=webmail&utm_term=icon>
Virus-free.
www.avast.com
<https://www.avast.com/sig-email?utm_medium=email&utm_source=link&utm_campaign=sig-email&utm_content=webmail&utm_term=link>
<#DAB4FAD8-2DD7-40BB-A1B8-4E2AA1F9FDF2>

462. Re: [24GHzHam] Endwave unit step by step for beginner.

Yahoo group: 24GHzHam
Date: 2017-11-29 21:27:11 UTC
From: iw8pny@...
Topic: 460 Message: 462

Thank you Zack !!
I did not see it. I had a lapse.
The file it's really complete.
I'll give you news and pics on the jobs.

73 Iw8pny Gino

463. 24 GHz FMCW RADAR

Yahoo group: 24GHzHam
Date: 2017-12-06 00:17:12 UTC
From: uwaves@...
Topic: 463 Message: 463

Following the recent mention in another place of FMCW RADAR, I have come across the following web page and associated commercially available product operating across frequencies used by 24 GHz amateur microwave enthusiasts:
http://houston-radar.com/PD300-OEM-doppler-speed-sensor.php?gclid=EAIaIQobChMIzpaAlIn01wIVWiQrCh1XBAgbEAMYASAAEgLnWPD_BwE#.WicziXlx200 http://houston-radar.com/PD300-OEM-doppler-speed-sensor.php?gclid=EAIaIQobChMIzpaAlIn01wIVWiQrCh1XBAgbEAMYASAAEgLnWPD_BwE#.WicziXlx200

Have any readers of this forum come across products/installations such as these?

And what is the likelihood of such an installation interfering with what we do, or our transmitting activities interfering with such equipment?

Seems interesting.....

--Doug Friend, VK4OE.